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# MYGALOMORPH SPIDERS OF THE BARYCHELIDAE IN AUSTRALIA AND THE WESTERN PACIFIC

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The Barychelidae of Australia, New Guinea, Fiji, and the western Pacific are revised and now include 22 genera. *Aureocrypta* is erected for the new Western Australian *A. lugubris* (type species) and *A. katersi*. *Idiommatia* is reviewed; many new species remain to be described. *Mandjelia* nov. includes *Tritumae thorelli* Raven, 1990, newly transferred, and new *M. anzses*, *M. banksi*, *M. commoni*, *M. brassi* (type species), *M. colemani*, *M. exasperans*, *M. fleckeri*, *M. galmarra*, *M. humphreysi*, *M. iwupataka*, *M. maccrackeni*, *M. macgregori*, *M. madura*, *M. naganuga*, *M. oenpelli*, *M. paluma*, *M. platnicki*, *M. qantas*, *M. rejae*, *M. wyandotte*, *M. wooroonooran*, and *M. yuccabine*, from northern and western Australia and New Caledonia. *Moruga* nov. from northern Australia contains *Idiommatia fuliginea* Thorell, and the new *Moruga thickhorni* (type species), *M. doddi*, *M. heatherae*, *M. insularis*, *M. kimberleyi*, *M. thorsborneorum*, and *M. wallaceae*. *Oziocrypta* nov. includes *Encyocrypta reticulata* Koch, 1874, *Idioctis palmarum* Hogg, 1901, and 23 new species: *O. australoborealis*, *O. clarki*, *O. clyneae*, *O. cooloola* (type species), *O. combeni*, *O. digglesii*, *O. etna*, *O. eungella*, *O. filmeri*, *O. hollinsae*, *O. kroombit*, *O. lawlessi*, *O. littleorum*, *O. lawlessi*, *O. mcarthurae*, *O. mcdonaldii*, *O. microcauda*, *O. noonamah*, *O. pearni*, *O. sinclairi*, *O. tuckeri*, *O. wallacei*, *O. walkeri*, and *O. wrightae*. New records are provided for *Sason* species. *Seqocrypta* nov. is described from southern Queensland and northern New South Wales to include new *S. bancrofti*, *S. hamlynharrisi* Raven & Churchill, *Seqocrypta jakara* (type species), and *Seqocrypta mckeowni*. *Synothele*, from WA and SA, is revised and now includes 24 species: *Synothele michaelsoni* Simon, 1908, *S. parifusca* (Main, 1954), and new: *S. arrakis*, *S. boongaree*, *S. butleri*, *S. durokoppin*, *S. goongarrie*, *S. harveyi*, *S. houstoni*, *S. howi*, *S. karara*, *S. koonalda*, *S. longbottomi*, *S. lowei*, *S. meadhunteri*, *S. moonabie*, *S. mullaloo*, *S. ooldea*, *S. pectinata*, *S. rastelloides*, *S. ruhripes*, *S. subquadrata*, *S. taurus*, and *S. yundamindra*. Five new species of *Tritumae* Koch are described: *T. augusteyni*, *T. berniesmythi*, *T. mcolli*, *T. rainbowi*, *T. stonieri*. *Tungari* nov. is described for new *Tungari kenwayae* (type species), *T. aurukun*, *T. mascordi*, and *T. monteithi* from north Queensland. *Zophorame* Raven is revised and the first male (*Z. gallanae* Raven) is described. The new *Z. covacevichae* and *Z. hirsti* are described from north Queensland.

The endemic New Caledonian *Barychelus* Simon, 1889 is limited only to the type species, *Barychelus badius* Simon, 1889 and *Barychelus complexus* nov. *Barychelus rouxi* Berland, 1924, is transferred to *Barycheloides*, gen. nov. which also includes 4 new species: *B. alluvophilus* (type species), *B. chiropterus*, *B. concavus*, and *B. rufosomatus*. *Encyocrypta* from New Caledonia include the new *E. abelardi*, *E. heloiseae*, *E. gracilibulba*, *E. bertini*, *E. grandis*, *E. bouleti*, *E. mckeei*, *E. risbeci*, *E. ouazangou*, and *E. kwakwa*. *Natgeogia rastellata* nov. and *Questocrypta galoboffi* nov. are described from Mt Aoupinié. *Orstom* nov. includes new *Orstom chazeaui* (type-species), *O. aoupinie*, *O. hydratemei*, *O. undecimatus*, *O. macmillani*, *O. tropicus*. *Fijocrypta vitilevu* nov. is described from Fiji from which also juvenile *Sason* are noted. *Nihoa* Raven & Churchill is rediagnosed and includes almost all barychelids from the western Pacific excluding New Caledonia. *Nihoa* now includes 23 species: two from the northeast, *Nihoa hawaiiensis* (Raven, 1988) and *N. mahina* Churchill & Raven, 1992; 9 newly transferred to the genus—*Idiommatia crassipes* Rainbow, 1898; *Encyocrypta annulata* Kulczynski, 1908; *Idiommatia annulipes* Thorell, 1881; *Idiommatia aussereri* L. Koch, 1874; *Encyocrypta maior* Kulczynski, 1908; *Encyocrypta pictipes* Pocock, 1902; *Idiommatia sordida* Rainbow, 1898, *Idiommatia variata* Thorell, 1881, and 14 new species: *N. bisianumu*, *N. courti*, *N. gressitti*, *N. gruberi*, *N. irakara*, *N. kaindi*, *N. karawari*, *N. lambleyi*, *N. madang*, *N. mambulu*, *N. raleighi*, *N. tatei*, *N. vanuatu*, *N. verireti*. Indomalaysian *Rhianodes* Raven is reviewed. The male and female of the type species from Singapore are described for the first time.

Morphological characters and their phylogenetic and functional relevance are discussed. The role of mygalomorph spiders in questions of disturbance, land management, conservation

and biodiversity is elucidated. □ *Mygalomorphae*, *Barychelidae*, taxonomy, phylogeny, Pacific, Australia, New Caledonia, New Guinea, envenomation, biodiversity, envenomation.

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#### SPECIES INCERTAE SEDIS

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#### INTRODUCTION

Of all mygalomorph spiders, perhaps few are so cryptic as the Barychelidae, the Brush-footed trapdoor spiders. Their burrows often lack the firm thick door of the Ctenizidae or the extensive webs of Dipluridae. Barychelids are most easily found when not specifically searched for. Burrow doors of the ornate *Sason* are so well camouflaged that even at few cms, the doors are not evident. Of 156 species dealt with herein, 129 are new, 77 are known only from a single specimen, 115 from a single sex, and 143 from a single discrete locality (but see below). Globally, Barychelidae show a far higher diversity in the Pacific than elsewhere (Fig. 1). That is partially because the Neotropical fauna is unrevised but my preliminary research on that fauna indicates that generic diversity in the Pacific will always be higher than elsewhere.

Lack of material has compounded taxonomic problems because the species, generic or higher significance of a character cannot be fully appreciated until it is seen in duplicate specimens. Material of *Idiomnata* from all Australian museums has been sorted and an estimated 20-30 more species are evident. Hence, the figures given above are conservative.

Despite the high proportion of all barychelid genera included here, no clarification of higher group relationships within the family was evident. Finally, through a fortuitous loan of *Sipalolasma* a remarkable new character (claw tufts on the female palp) emerged. The character had not been recognised because it was present in all taxa herein save one (*Rhianodes*) from Singapore. *Rhianodes* did not initially qualify for inclusion because it is remote from the western Pacific. It was included initially only because it seemed closely related to *Nihoa* Raven & Churchill, 1992, then believed to be endemic to the Leeward Islands. In any case, the lesson is clear. Material outside the study group gives new and valuable perspectives and should not be shunned because of potentially added descriptive load.

Australian Barychelidae have been known from 17 species in *Encycrypta*, *Idiomnata*, *Sason*, *Synothele*, *Trittame*, and *Zophorame*; Main (1985) listed 11 species and 2 incertae sedis. Most have been transferred from other genera at least once, and yet no revision has supported many of those changes.

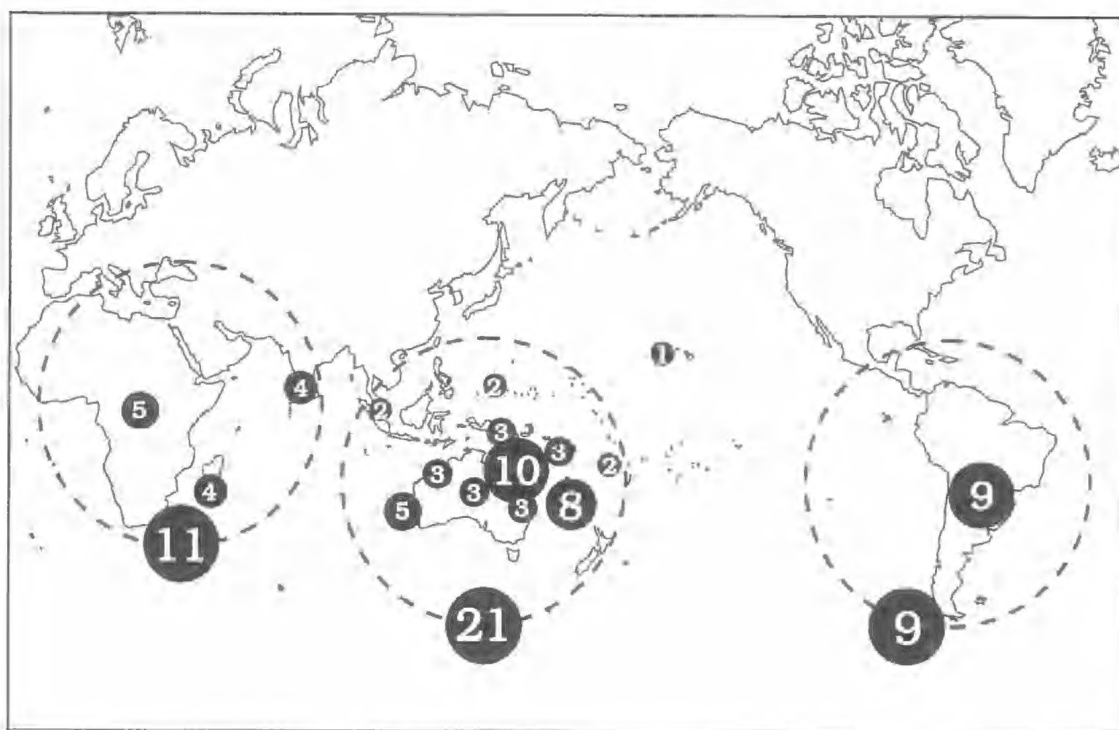


FIG. 1. Generic diversity of Barychelidae. Number of genera within dashed circles. Total number of genera in region on circumference of larger dashed circles.

#### MATERIALS AND METHODS

Geographical co-ordinates given in [] parentheses are taken from a gazetteer and thus differ from those taken after reference to the collector from a known collecting site. In from New Caledonia, reference is made to 'parc'. 4, 5, 6, etc. That is an abbreviation for 'parcelle', an ecological 'site' in Rivière Bleue and special areas being focussed upon by O.R.S.T.O.M. Queensland localities include a regional modifier, e.g. SE, NE, on the state and are clarified in Ingram & Raven (1991) (see Abbreviations).

*Diagnoses* include characters that distinguish the taxon from those most similar to it followed by the unique combination of characters of the taxon that must all be present for confirmation of species derived from the key. In species diagnoses, characters given first are found in both sexes, or inferred to be in both because they are not strongly dimorphic in males and females. However, the rastellum and preening combs are less developed in males. Hence, although preening combs be absent males, females may have them. However, if a rastellum or preening combs are absent in females, they are always absent in

conspecific males also. Basifemoral thorns (setae) are never found in males.

*Species descriptions* are based upon all material examined but measurements and counts are only of the specimen noted. Mygalomorphs are notoriously variable on left and right sides of one intact animal. Hence, the actual values are given simply as a guide to the variation in the species and an adjunct to its identification.

*Colour.* Unless otherwise stated, colour observations are made on specimens in 70-75% ethanol illuminated with a fibre optic light.

*Eye measurements.* Eye measurements are in units of 0.02mm being taken from camera lucida drawings at a magnification of x50. Distances between eyes are measured along a line joining their centers and are expressed as diameters of an AME, at the lens, save for ALE-PLE which is the smallest distance. Lengths of eye groups (MOQ, median ocular quadrangle) are the maximum lengths measured along lines parallel to the length or width of the carapace. Eye interspaces are measured along a line joining the centres of the respective eyes, except for ALE-ALE and ALE-PLE which are the separation of the closest points; they are expressed as diameters of an







AME. However, lenses of the AME make a very small angle with cuticle of the tubercle and are transparent. Hence, size of AME is often difficult to determine. A new ratio describes relative separations of the lateral eyes. *Lateral eye ratio* is the distance between the corner of the posterior lateral and anterior lateral eyes of the same side divided by the distance between the anterior lateral eyes of each side, i.e., ALE-PLE/ALE-ALE. Eye group width is the quotient of the width of the group through its centre and carapace width along the same line.

Leg measurements are measured along the dorsal midline of legs and do not include joints. Leg spines are considered 'lateral' (pro- or retro-) if the base is not evident, save for obscuring hairs, when the segment is viewed dorsally. Thick setae (probably attenuate setae of Coyle, 1974) that are in a similar position to true spines but too thin to be so regarded are indicated by the letter 'w' after the number of such setae. Spines, combs, scopula, special setae, and claws are described using the roman numeral for the leg to which they pertain.

*Thorn spines* are short conical spines on prolateral patellae III and sometimes also IV.

A *rastellum* is considered any modification of the distal edge of chelicerae above the fang that may facilitate digging and smoothing walls. A rastellum may consist of a group of thick bristles or spines. Those may be set on a smoothly curving anterior face of chelicerae or on a raised mound. The rastellum is best seen from below. If setae on the rastellum are basally wide and have long slender tips, they are considered *spine-like bristles*. Spines are typically short, blunt and often broken.

*Preening combs* are a distal cluster of 2-6 setae with bases touching. In barychelid in this monograph, they usually occur only on metatarsi III, IV, distally on proventral and/or retroventral corners.

Spermathecae described as *antennate domes* are considered plesiomorphic for barychelids. They consist of two low broad domes each with a slender lobe ectally. Ectal lobes have enlarged tips, hence 'antennate'.

The tibial *spur* is the cuticular projection on the lower surface of tibia I of males. It spur has a *megaspine*, an immovable spine, that is usually apical. Associated with the spur is a small process, *microspur*, set on the prolateral face and below it is another megaspine. The microspur may be absent, as may the megaspine. However,

if a microspur is present so too is a megaspine. A megaspine may occur without an associated microspur.

Measurements are taken as follows: carapace and abdomen, length along dorsal midline, width across widest point; labium, width across base, length between lines drawn across most anterior and posterior points; maxillae, front width includes anterior lobe, back width includes heel, length at midpoint; sternum, length, between lines drawn across most anterior (usually lateral of labium) and posterior points, width, widest point; spinnerets, length, along ventral midline, width taken at midlength.

*Scopula* are difficult to describe. Terms used here convey extent of scopula, some indication of hair density, and whether scopula is uniform across the ventral surface, *entire*, or split into two parts by a band of setae longitudinally down the ventral midline (see below). Extent of main body of the scopula is given for metatarsi: full, means for the full length, distal 1/2, means for the distal half, etc. Rarely is the scopula not full (i.e., present for the full length) on tarsi. Scopula hair density is expressed as dense, moderately dense, thin, and sparse. Thin and sparse scopula are probably not functional because scopula hairs are overwhelmed by normal hairs and the leg cuticle is clearly seen through them. Dense and moderately dense scopula are a continuous pad of hair. Density is conveyed also by hair length. Long hairs tend to form denser scopulae, short hairs less so. Scopula that are not entire are *divided* by a band of setae or setal band (Fig. 14A). Width of setal band is conveyed by the number of setal bases in a line across the band, e.g., divided by setal band 8-10 wide. Usually, the more setal bases in a line the wider the band and the narrower the remaining scopula bands. However, in some cases, setal bases are tightly grouped and the band is narrow, or may be wide with a sparse (4-6) setal band. The setal band may widen considerably distally from a narrow basal width. Rarely, setae do not form a single band but are scattered over the ventral surface, such setae are described as *mixed* with scopula.

*Trichobothria* on tibiae are described by the extent from the proximal end of tibiae that the two rows occupy. On metatarsi, trichobothria form a distal line on the dorsal midline. The line may be *curving* or (rarely) *diagonal*, if a straight line can be drawn along its length. A fractional value may

FIG. 2. Entire spiders. A, B. *Segocrypta jakara*, ♂ (A), ♀ (B); C, D. *Idiommatia* sp., ♂ (C), ♀ (D); E. *Barycheloides alluvophilus*, ♀; F. *Encycrypta aureo*, ♀; G, *Mandjelia banksi*, ♀; H. *Mandjelia thorelli*, ♀.



be given which describes the portion of the metatarsus with trichobothria.

#### COLLECTING TECHNIQUES

Barychelids, especially females, were limited in collections throughout the world in the early 1980's; the same was true in Australia, with the exception of the large *Idiommatia*, the males of which must be very active. Cryptic burrows of barychelids make them among the least known mygalomorph groups. Normal mygalomorph collecting techniques—excavating burrows, rolling logs, night collecting—do not yield barychelids in number. However, pitfall traps alone yielded one-third of the new *Synothele*. If traps produced barychelids in an area, other methods were tried to yield more. Main (1976: 280) advocates either slicing the surface with a spade or excavating a trench around a burrow entrance leaving the burrow in an isolated island which is excavated carefully into the trench. The method may be useful on open flat ground in Western Australia but in entangling roots and rocks of eastern rainforests, it is either impractical or too destructive. Existing methods needed improvement and method varies with terrain.

**Locating Burrows.** In open ground in any forest type, a large sharp sheath knife is used instead of a shovel. The surface of the ground is 'shaved' and a flash of white silk may be exposed by removal of a door. In litter-covered areas, a garden rake, in removing the litter, may also flip open doors. In rainforest, burrows with trapdoors are often found against tree buttresses and rocks. Burrows of *Encyocrypta* and *Mandjelia* may also be attached to leaves and on the bark of trees. Often, nondescript barrel-shaped tubes with adherent soil (made by spiders of several genera) can be found in rotting logs, frass at the base of palms and ferns. Barychelids explore many microhabitats from the littoral zone where they build trapdoor nests in mangrove trees, coral rubble and mud (Churchill & Raven, 1992) to almost permanently cloud-covered mountains in which they build in moss with the body of the nest pressed close to the tree trunk well above the moss. Barychelids seem to avoid heavily flooding areas, like creek banks and beds. They are commonly found in nests at least partially attached to fallen logs. In some cases, short double-door tubes are initially overlooked because they are soil encrusted and camouflaged with dead wood on the ground. Often, in rainforest, a leaf-by-leaf removal in 3-4 'plots' each of 1-3 m<sup>2</sup> of the litter while also scanning the soil surface and using a

strong head torch (even diurnally) will yield barychelids. Mygalomorphs tend to be very localised; hence, failure to find them in one plot indicates only that a group is not near. In general, at least two hours of slow careful searching must be spent in each microhabitat in wet and dry periods before barychelids can be considered reasonably sampled. Continuous pitfall trapping over about 14 months (Churchill, 1993) is a minimum target period if barychelid males (critical to many species problems) are to be taken.

**Excavating Burrows.** This is a problem, especially in rainforests, but also in open forest with much ground cover. I use a thin green stem or equivalent to plumb the overall direction of the burrow. A small pit about 20-30 cm square is excavated about 20 cm away from the nearest point of the burrow's range. On slopes, the pit is better positioned below or to the side of the entrance than above it. The pit must remain as deep or deeper than the burrow. The danger is that spiders may be killed by pushing a probe down to them along the burrow or by cutting through a sideshaft and spider. Sideshafts are generally sealed with a thick door and are c. 6-8 cm long. Barychelids will not usually rise from a burrow to attack. However, mygalomorphs are often by large centipedes (*Ethmostigmus*) which break into the burrow near its base. In two such cases, spiders launched themselves from the burrow; in one case (*Idiommatia*), the centipede remained in the burrow, in another (*Hadronyche*), it followed the spider to the entrance. In general, excavated female barychelids are not aggressive; a male barychelid here described (*Mandjelia paluma*) did bite its collector. Hence, as with all mygalomorph collecting, prudence must always be observed.

#### ABBREVIATIONS

**Museum Acronyms.** AM, Australian Museum (Dr M.R. Gray); AMNH, American Museum of Natural History (Dr N.I. Platnick); ANIC, Australian National Insect Collection, C.S.I.R.O., Canberra (Dr R. Taylor); BPB, Bernice P. Bishop Museum, Honolulu (Ms Sabina Swift); BMNH, Natural History Museum, London (Mr P.D. Hillyard); MAGNT, Museum & Art Gallery of the Northern Territory, Darwin, Northern Territory (Ms Jenni Weber); MCG, Museo Civico di Storia Naturale 'Giacomo Doria' (Dr G. Arboreo); MNHN, Musée National d'Histoire Naturelle, Paris (Drs J. Heurtault & C. Rollard, & Mr M. Hubert); MTQ, Museum of Tropical Queensland, Townsville (Dr P. Arnold); MV, Museum of Victoria (Dr Ken Walker & Ms Cedrona McPhee); NHB, Naturhistorisches Museum, Biele (Ms C. Stocker); NHMW, Naturhistorisches Museum, Wien (Dr J. Gruber); NMNH, Naturhistorisches Museum, Wien (Dr J. Gruber); NMNH,

National Museum of Natural History, Budapest, Hungary (Dr S. Mahunka); QM, Queensland Museum, Brisbane; SAM, South Australian Museum, Adelaide (Mr D. Hirst); WAM, Western Australian Museum (Drs M. Harvey & L. Koch); ZICU, Department of Zoology, James Cook University, Townsville, Queensland (Mr M. Downes); ZMB, Zoologisches Museum, Berlin (Dr M. Moritz); ZMH, Zoologisches Museum und Zoologisches Institut, Hamburg (Dr G. Rack); ZUWA, Zoology Dept, University of Western Australia, Nedlands (Dr B.Y. Main).

**Distributions.** Ingram & Raven (1991) presented a functional breakup of the state of Queensland that roughly reflects broad biogeographic regions. That breakup is adopted here (Fig. 28). MEQ, mid-eastern Queensland; NEQ, northeastern Queensland; NC, New Caledonia; NSW, New South Wales; NT, Northern Territory; PNG, Papua New Guinea; SA, South Australia; SCQ, south central Queensland; SEQ, southeastern Queensland; WA, Western Australia.

**Collectors.** AG, A. Graham; AR, A. Rozefelds; BYM, B.Y. Main; CH, C. Horsfield; DC, D. Cook; DH, D. Hirst; DJC, J. Chazau; DM, D. Mead-Hunter; DW, D. Wallace; DY, D.K. Yeates; ED, E.C. Dahms; GC, G.C. Czechura; GL, G.H. Lowe; GM, G.B. Monteith; GSM, G.B. & S.R. Monteith; HJ, H. Janetski; JAG, J.A. Gallon; JC, J. Coycevic; JW, J. Waldo; KP, K. Plowman; KRM, K.R. McDonald; KW, K. Williams; LBL, L. Bonnet de Larbogne; MG, M.R. Gray; MH, M.S. Harvey; MS, M. Shaw; NP, N.I. Platnick; PG, P. Goloboff; PL, P. Lawless; RK, R. Kohout; RR, R.J. Raven; SAT, S. & A. Tillier; ST, S. Tillier; TC, T.B. Churchill; TH, T.F. Houston; TJ, T. Jorgensen; VTD, V.T. Davies; WFH, W.F. Humphreys.

### Family BARYCHELIDAE MORPHOLOGY

Unless stated, comments apply only to females.

#### CARAPACE

**Pilosity.** Carapace pilosity varies from almost glabrous (many small species) to a pile of hair so thick that the carapace cuticle is obscured. Description of that pilosity and different hair types require definitions. *Hairs* are uniformly fine throughout their length, with small bases, and are usually sinuous. They are the smallest of setal types (excluding trichobothria). Hairs on the carapace and legs are different in structure from the scopula. They are typically simple and lack complex fluting and fimbriations which occur in scopula (Fig. 17A, B). They are also more prostrate on the cuticle than other setal types. Hairs may cover the carapace, extending to the lateral margins and eye tubercle where they intermix with other setal types. They are rarely found in striae grooves. *Setae* are thicker, shorter, have distinct bases, and are distinctly tapered at least

for their distal third. Setae are numerous and have similar distributions to hairs on the carapace. Setae tend to form distinct narrow bands 2-3 setae wide; those bands form a reticulated pattern often most evident on the thoracic region. Setae appear to be tightly articulated and have little or no angle of basal movement. *Bristles* are longer, thicker setae. They are fewer in number, erect, with distinct bases to which they are well hinged. Tree-dwelling hexathelids tend to have more (and longer) bristles, suggesting that they have a sensory function in detecting vibrations in the loosely hung silk walls of a burrow (Raven, 1978).

Most barychelids have a light pile of hair and setae on the carapace. Hence, a substantial increase or reduction in pilosity is useful taxonomically. However, cephalic bristles show more general utility. Bristles are often in pairs anterior to the fovea (foveal bristles) where they extend along the edge of the caput just above the long anterior striae. They are also evident in some genera along inner edges of posterior striae. Their absence (e.g., *Encyocrypta*) is most parsimoniously considered a secondary loss and apomorphic. Anterior to the fovea, extending to the back of the eye group, is a distinct narrow band of long curved bristles; bilaterally there are two broad bands of short strong setae. Lateral margins are often clad with long procurved bristles directed horizontally and mixed with a bush of long hairs. These are longest and most numerous on posterior lateral corners of the carapace. Toward the carapace midpoint, bristles are short and show some regularity in reversing direction 2-3 times along the anterior half of lateral edges. Long erect recurved bristles also occur on the eye tubercle just anterior to the AME; a complementary group of procurved bristles occurs between the posterior median eyes.

In females of most genera, carapace hairs are 'earth' colours, e.g. brown, orange brown, or yellow brown. However, in both sexes of *Idiomata* and many barychelid males, carapace hairs are silver. Carapace pilosity of males is different from that of females. Equivalent setae of females are replaced by long strong erect bristles; bristles are much longer and stronger, and hairs tend to be longer. The difference is widespread in most mygalomorph families but is not evident in theraphosoids.

**Caput.** It is typically long and narrow with a low curved gradual rise so that the thorax is lower but curved. Caput elevation is more distinct in genera with strongly procurved foveae.

**Striae.** Striae are scars formed by attachments of muscles to chelicerae (anterior striae) or the endosternite. They are usually narrow, glabrous, shallow and indistinct but are more evident in females and most males of some genera.

**Fovea.** The barychelid fovea is always transverse, usually short with a slight to very strong procurvature; rarely is it recurved. The most widespread condition is short and slightly procurved. As in many mygalomorph groups, the fovea in males is smaller and much less curved than in females and is often straight; strongly curved fovea of Actinopodidae, Ctenizidae, and Migidae are notable exceptions (Raven, 1985b).

**Lateral cuticular shelf.** This is a pair of long crescent-shaped islands of sclerotised setose cuticle below posterolateral corners of the carapace. Gertsch & Platnick (1979) referred to them as pleural extensions. Eskov & Zohnstein (1990) attempted to use the significance of 'pronounced pleural extensions' in support of their 'phylogram' of mygalomorph families. However, the widespread presence in Barychelidae and Theraphosidae alone indicate simply that Eskov & Zohnstein (1990) failed to examine enough family groups. Extensions are very obvious in *Idiommata*. They are present in many genera but are usually concealed by an infolding of soft elastic tissue. Goloboff (1993) also discarded this character on similar grounds.

**Shape.** The carapace is subovate with a recurved anterior margin and medially indented on the posterior margin. Overall shape varies from long ovate to broad, and presumably is reflected in sternum shape. Males, as in most mygalomorphs, have a shorter carapace than females. Carapace shape is a good identifier of genus but has not here been quantified.

**Chilum.** Goloboff (1993) identified another character on the pleura. It is a pore in the small oval island of sclerotised cuticle immediately in front of the anterior midpoint of the eye group which Jocqué (1991) named the chilum. It is seen best in specimens in which pallid cuticle between the paturon and carapace is distended. It appears in all barychelid taxa to varying extents.

## EYES

**Number and Group.** In barychelids, the normal condition is eight eyes. *Synothele septoculata* and *Mundjelua galmarra* have only 7 but since the condition is not bilateral it is considered aberrant. The plesiomorphic condition of the eyes is eight in a rectangular group about 2 times wider than long (Raven, 1985b), as in *Monodontium*. The

eye group of most barychelids shows some degree of lengthening from widely rectangular in *Sason*, through subquadrate to square in *Tritame*, *Rhianodes*, and some species of other genera. In *Moruga*, the back row is wider giving a strongly trapezoidal effect, alternatively in *Synothele*, *Mundjelua*, and some *Ozicrypta*, the relative length of the group increases. Direction of change is parsimoniously away from (not towards) the wide rectangular state. However, it is not a single simple transformation series. In a cladistic analysis, I have split the eye group shape into two characters: one ordered binary character using wide rectangular as plesiomorphic and any other modification as apomorphic; the second character is a series of unordered multistates—one for each general shape. Only using this procedure do all species of a monophyletic genus form one clade.

Group shape and eye disposition vary only slightly between conspecific males and females. However, AME of males are often significantly larger than in females. Front eyes in two rows when an imaginary line joining the back edge of the ALE lies in front of the AME.

**Tubercle.** This is usually well defined on all sides by a steeply sloping face. However, in *Moruga* the lateral and anterior edges are much more gradual; in contrast, in *Tungari*, the back edge is steeply defined. Degree of slope is conveyed partially in lateral eye shape, which would appear circular (or at least the entire margin would be evident) if the slope were zero. The steeper the slope the more lateral the view of the eyes. Bounds of the eye tubercle are figured as a curving line between outer edges of the eyes.

**Colour.** Eye colour is typically orange or yellow brown. The PME may be silver. Coddington (pers. comm.) assures me that mygalomorphs do have a tapetum; presumably quality of preservation contributed to my failure to be able to confirm this here. Two *Synothele* species have blue or green anterior median eyes. The cause is unknown.

**Direction of anterior lateral eyes.** Anterior lateral eyes (ALE) are the most anterior eyes and are set on the tubercle edge. In groups in which separation of ALE is small, the eyes tend to be directed more to the front than the side, e.g., *Tritame*.

## CHELICERAE

**Shape, size, and fangs.** Chelicerae are not strongly modified in any known barychelid genus. Length (relative to carapace length) varies

strongly among genera but does not appear correlated with a burrowing habit or a strong rastellum. In males, chelicerae are smaller than in conspecific females. Fangs are long and strong, always directed paraxially and none are seen with the diagonal condition like actinopodids in which direction is intermediate between the diaxial state. The venom aperture, as in other mygalomorphs (Comstock, 1913), is on the posterior side of the fang.

**Tooth rows.** Teeth of the promarginal row are large; no retromarginal row or 'vestige' is evident. Basomesally, a cluster of small teeth or granules is found often in females but may be absent in conspecific males. That cluster is confined to the basal one-third in most genera. However, in *Barycheloides* the distal teeth of the row are enlarged and the row extends for the length of the furrow but does not 'drift' onto the retromarginal edge. Males of most *Mandjelia* species lack teeth basomesally.

**Intercheliceral tumescence.** In one *Nihon*, and some *Synothele* and *Tritane* males, a rudimentary form of this structure, first noted by Raven (1985b), is found. Goloboff (pers. comm.) reports its presence in the barychelids *Cosmopelma*, *Paracenobiopelma*, *Neodiplothele* and in *Trichopelmatinae*. It occurs on the inner basal corner of chelicerae and is evident as a pallid, soft, circular area. In more developed states, it is larger and covered with strongly thickened setae. Its function remains unknown; it has not been found in females.

**Other setal modifications.** In the theraphosid *Coremiocnemis*, a group of stout clavate setae occurs on the inner upper face of the chelicerae deeply posteriad (Raven, 1985b). Remarkably, a similar but unrelated condition occurs in some males and females of *Idiomma* (Fig. 29).

#### RASTELLUM

The rastellum occurs on anterior and lower margins of chelicerae of many mygalomorphs. In most barychelids it is absent. When present, it varies from a line or cluster of weak spines through to one of the most developed forms (*Barycheloides*) and vying only with that in *Actinopodidae*. The rastellum consists of a process or mound and spines. The process arises in the inner distal corner of each chelicera. As an indistinctly domed area it is uniformly clad with spines of variable shape. In contrast, in its most developed form, the rastellum is a produced curved process shaped like the digging claw of a mechanical shovel. The lower concave edge is

glabrous and aspinose. Only the leading edge and convex area on the process above it are spinose. The spines are short, strong, blunt cones and are usually damaged only in the apical one-sixth or less. The mound may also be evident as a low but distinct ridge occupying the front inner distal edge of each chelicerae; spines are typically short and arranged along the inner edge, where they are shortest and strongest, in a triangular area to the cheliceral apex where they overhang the fang and are longer.

A difficulty arises in determining whether spines on the distal edge are sufficiently strong to aid digging and be deemed a rastellum. The solution used here is to describe the setal armature. Clearly, if setae on the rastellar region are long and tapering, they are not useful in digging and a rastellum is 'absent', no matter how dense the setae. However, if 'setae' are at all rigid and have only slightly or no movement possible at their bases they are considered a functional part of the rastellum.

Size of rastellum, in some groups, appears to bear little relation to nature of substrate. This is especially evident in New Caledonia where the most developed rastellum (in *Barycheloides*) is found in species which build in the island's softest soils, the flood plains of Rivière Bleue. Equally, in often hard dry rainforest soil of Col des Roussettes, burrows of the strongly rastellate *Barycheloides chiropterus* and the arastellate *Orstom tropica* are equally deep, sinuous, and have similar doors. Hence, rejection of the phylogenetic significance of a rastellum because it is functional is unfounded. This example indicates that the rastellum may be a historical acquisition and hence phylogenetically significant but whose initial functional value may later be lost. In Australian barychelids, a weak rastellum is sometimes associated with a comb of short strong conical spines on patellae and femora III and IV (see *Legs*).

#### LABIUM

The labium is always wider than long, with convergent lateral edges, anteriorly indented and the back margin against the labiosternal suture distinct. Its relative width, setation and topography varies widely. In males, it tends to be shorter than in conspecific females. In many groups, it is broadly domed in a smooth curve; the setation is uniform across the entire surface. In some groups, a transverse glabrous groove is evident in the anterior half. Behind that groove, a line of long distinct 6-8 evenly spaced isolated



recurved setae may arise; behind those many shorter finer setae form a band. In most cases, the anterior edge of the labium has long horizontal setae projecting forward, presumably to aid filtration of food. Unlike diplurids, the labium lacks a pallid anterior edge.

Labial cuspules are absent in most barychelids except in *Rhianodes*, some *Nihoa*, *Zophorame*, some *Sasoninae*, and the *Trichopelmatinae*. *Trichopelmatinae* are atypical barychelids in having a dense cluster as in theraphosids; they will be dealt with elsewhere. In *Sasoninae*, cuspules, if present, form a single line on the anterior edge of the labium (Raven, 1985b). Cuspules are also numerous in males and females of *Zophorame* (Raven, 1990 & here). In male *Sasoninae*, labial cuspules may be absent or incipient. In *Rhianodes* and *Nihoa*, the labium has 1-3 cuspules, rarely more, but some species lack labial cuspules. All other genera lack cuspules. Hence, presence of even few cuspules is considered significant. No labial cuspules have been scanned; however, in shape and size they resemble maxillary cuspules (see below).

The labiosternal groove was first identified by Raven (1985b:20) as a source of problems in family boundaries proposed by Simon (1892, 1903) among others. In barychelids, the groove is typically narrow and shallow. In none, have I seen raised mounds noted in the selenocosmiine *Theraphosidae* (Raven, 1985b). The main variation is that sigilla that comprise the groove may be indistinguishable within it (Fig. 27D), or they may be evident as two widely tear-shaped separate depressions near its outer corners (Fig. 37C). Neither character shows any evident association with generic boundaries.

#### MAXILLA SHAPE

Maxillae are roughly rectangular. The anterior face of the ventral surface recurves toward the heel; on that face, a large glandular area (Fig. 11C) presumably represents the maxillary gland. Across the anterior face, a loose band of long sepia to red curved bristles (Fig. 37C) aid filtration of large particles. The *heel*, the posterior ventral corner of the maxillae, is generally produced backward and accentuated by the incurved inner edge of the maxillae. Often the heel obscures part of the labium and sternum (Fig. 157E). The *anterior lobe* is the anterior ventral corner and is a short conical process defined, often weakly, by a diagonal groove (Fig. 157E). It is typically short and rarely if ever reaches the lobe size in theraphosids. No serrula has been

found in barychelids. The plesiomorphic condition of the anterior lobe is the unmodified form evident in liphistiids, nemesiids, and most rasteloids; the most derived condition is that in *Paratropididae* (Raven, 1985b, figs 170, 178). Enlargement of the anterior face of maxillae in atypids and mecicobothriids is not homologous with the anterior lobe. In atypids and mecicobothriids, the enlargement arises on the inner, not the outer, corner of the maxilla (Raven, 1985b). In *Rhianodes*, the anterior maxillary face has a slightly pallid glabrous diagonal groove (Raven, 1985b) similar in position to the lyra ridge in *Idiommata*. However, setae near and on that ridge are not modified.

#### MAXILLARY LYRA

This is a transverse band of long thick spines on the anterior face of the maxillae (Fig. 23) directed down the face. It interacts with a line of fine 'pins' or 'strikers' along the outer edge of the cheliceral furrow. The pins are believed to act across the lyra spines and cause sound. In *Selenocosmia*, sound is made when the spider is aggravated and is an audible hiss (pers. obs.). (Goloboff (in litt.) reports the same sound in the theraphosids *Acanthoscurria sternalis* and *Pseudotheraphosa*.) No sound has been recorded from the lyra of a barychelid. In all taxa known, the lyra occurs in both sexes. It is found in many theraphosids and diplurids, *Diplura* and *Trechona* (Raven, 1985b), as well as the barychelid *Idiommata* and here in a weak form newly reported in *Aureocrypta lugubris*. Main (1967) indicated that *Lampropodus* (since synonymised with *Idiommata*) differs from *Idiommata* in lacking a stridulatory lyra. However, the types of all species originally placed in *Lampropodus* all have a distinct lyra. Form of the lyra in *Idiommata* is similar to that in theraphosids. However, the fine structure of the setae (Fig. 23D) are different. The comparison will be explored elsewhere. Within barychelids, the lyra of *Idiommata* is different in strength, position, and insertion to that of *Aureocrypta lugubris*. In *Idiommata*, the spines are a narrow band of setae directly on the face of the maxilla. The spines are rigid and much thicker than the surrounding setae. The shaft is long, cylindrical, and smooth. They have an incrassate subapical portion tapering to a unilateral finely fimbriate tip. Also, the spine bases are about central on the maxilla. Number and size of spines varies in some species. In *Aureocrypta*, setae are in a single line in a shallow groove, similar in position to the

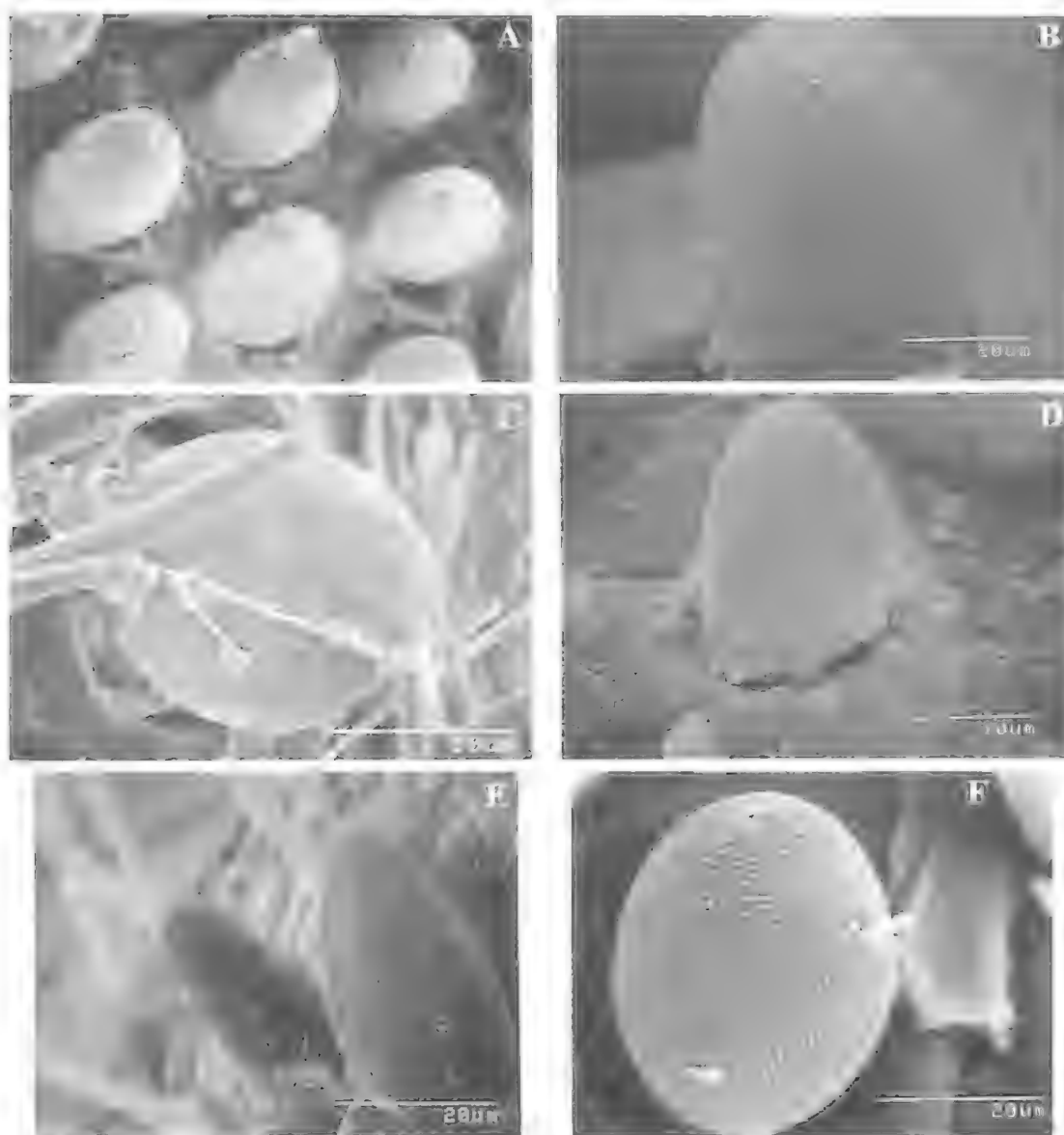


FIG. 3. Scanning Electron Micrographs: maxillary cuspules, ♀♀. A, *Selenocosmia* sp., (Theraphosidae); B, *Linothele* sp. (Dipluridae); C, *Pisenor* sp.; D, *Ammonius* sp.; E, *Sason colemani*; F, *Sipalolasma* sp.

groove of *Rhianodes*. The setae are noticeably thicker than setae above them but about as thick as the long red hairs along the lower front edge of the maxillae (Fig. 23A). Shafts are long basally smooth but deeply fluted, whorled and fimbriate for their length; the lyra setae are not rigid. No specialised setae are evident on the cheliceral edges. Hence, the structures in *Idiommata* and *Aureocrypta* are not considered homologous.

#### MAXILLARY CUSPULES

Maxillary cuspules are short, thick, black and rigid modified setae. They are found on the maxillae of most mygalomorphs on the inner ventral corner sometimes extending out to the anterior lobe (*Zophorame*, *Trittame*) or back onto the heel (*Natgeogia*). Number of cuspules in mygalomorphs was newly reassessed by Raven (1978, 1985b) who placed significance on number and presence of cuspules on the maxillae and

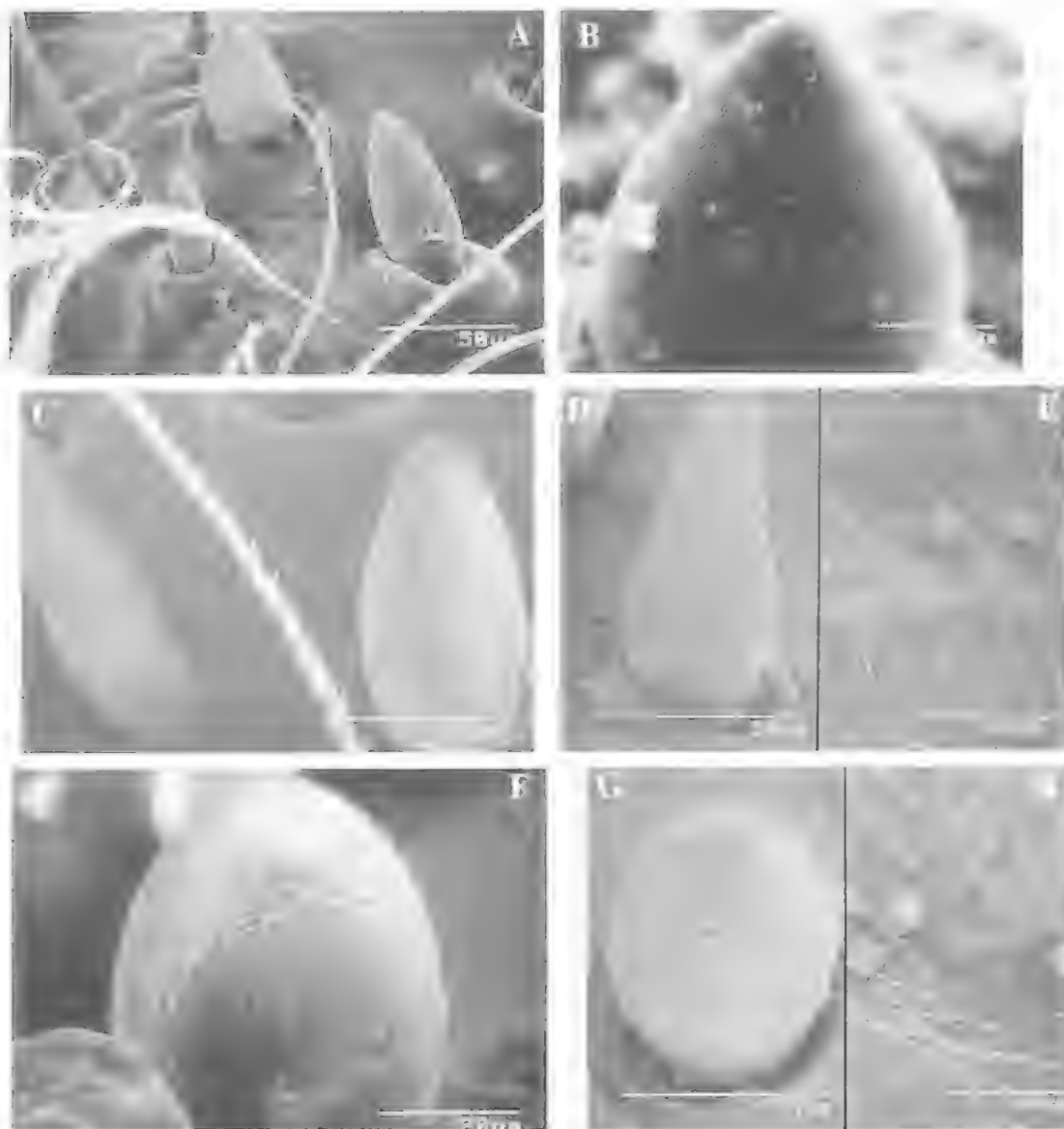


FIG. 4. Scanning Electron Micrographs: maxillary cuspules, ♀♀. A, *Aureocrypta lugubris*; B, *Idiommata* sp.; C, *Idioctis helva*; D, E, *Nihoah mahina*; F, *Tungari mascordi*; G, H, *Synothele michaelsoni*.

labium in Hexathelidae and other mygalomorphs. Griswold (1985) suggested differences in microstructure of cuspules in two clades of *Microstigmata* may be a synapomorphy (see Microstructure). Snazell & Allison (1989:67) had 'certain reservations with regard to the validity of using comparative numbers of a character such as labial cuspules as an autapomorphy at this level'. They failed to recognize that it was not number of cuspules alone but an entire cladogram of

relationships parsimoniously arranged that were used to define the Hexathelidae. Eskov & Zohnstein (1990:348) accepted my suggestion (Raven, 1985b:10) that parsimony dictates that cuspules were acquired independently in several mygalomorph groups as well as in two atypid genera. They added Mecicobothriidae to the atypoid 'clade' and violated the precariously balanced parsimonious conclusion. Hence,

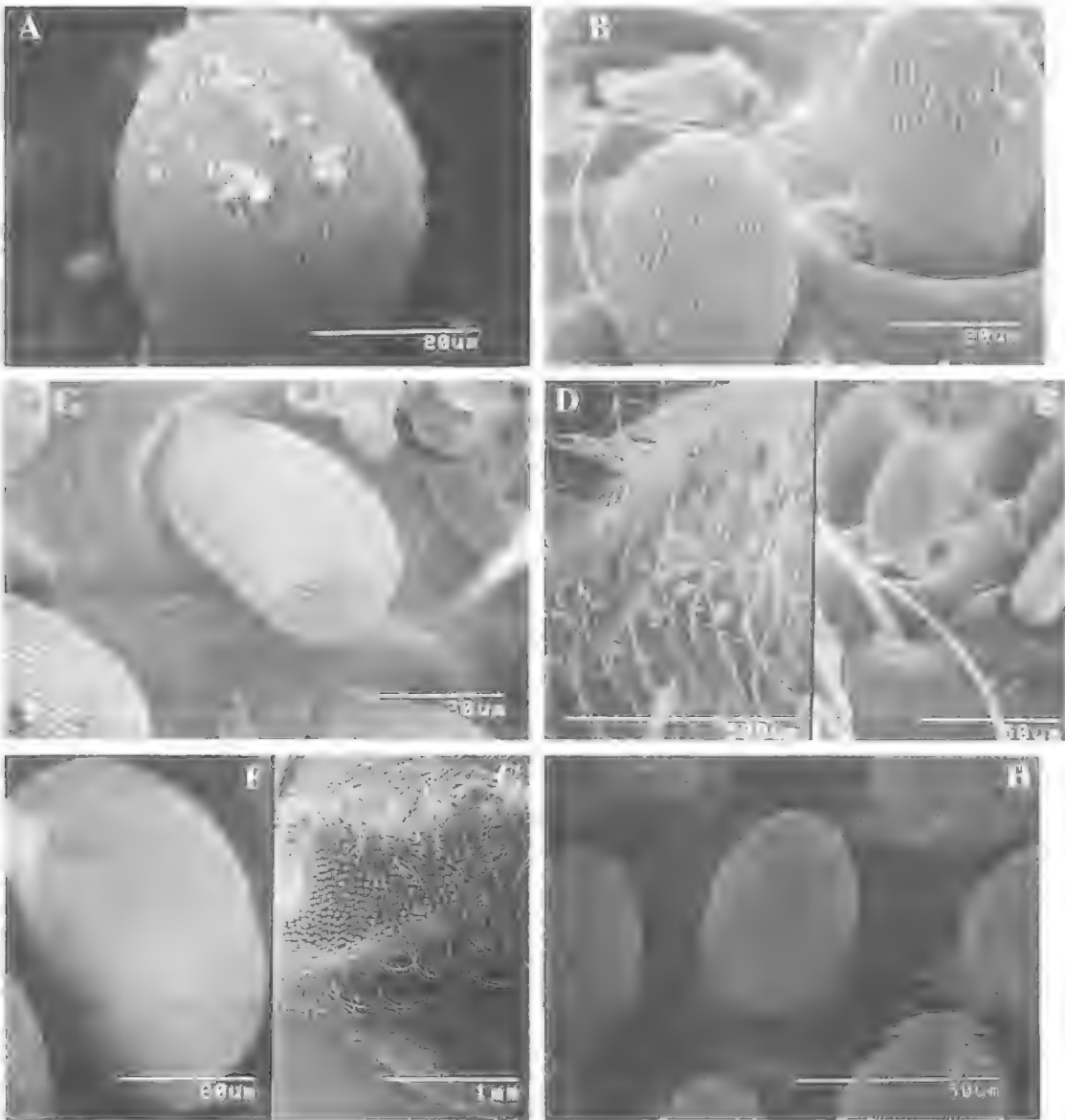


FIG. 5. Scanning Electron Micrographs: maxillary cuspules, *Mandjelia*, ♀♀. A, *M. brassi*; B, *M. commoni*; C, *M. platnicki*; D, E, *M. qantas*; F, G, *M. thorelli*; H, *M. iwupataka*.

cuspules are much misunderstood and little known.

Cuspules are known only in Mygalomorphae (Raven, 1985b). In barychelids, numbers of maxillary cuspules are here grouped into three states: very few, 0-5; many, 10-30; and very many, 40-200 or more. Intergradation is a problem. In Barychelidae, as with Hexathelidae and other taxa in which Raven (1985b) diagnosed using

cuspules, cuspule states correlate well other characters.

In barychelids when cuspules are few, they are clustered along the inner maxillary edge, sometimes in a line forming almost a continuous keel. Typically, they are widely spaced. However, when cuspules are very numerous, they occupy a similar area on the maxillae to those with few and hence are more densely packed. When cuspules of all genera herein, as well as diplurids and



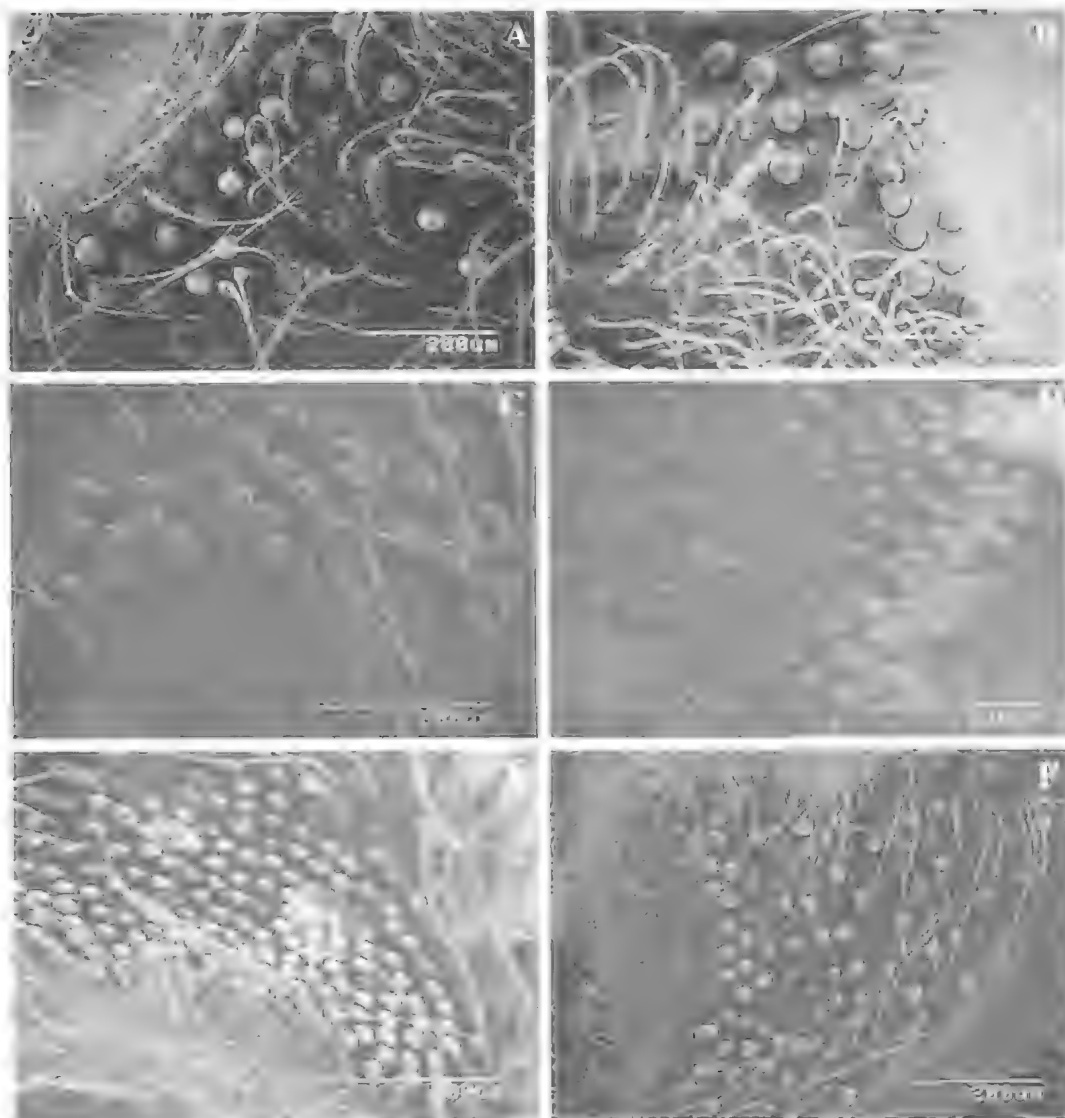


FIG. 6. Scanning Electron Micrographs: field of maxillary cuspules, ♀♀. A-C, *Mandjelia*, *M. brassi* (A), *M. commoni* (B), *M. fleckeri* (C); D, *Zophorame covacevichae*; E, *Trittame loki*; F, *T. kochi*.

theraphosids, had been examined with a SEM, further new informative characters emerged—size and microstructure of cuspules.

*Size.* Independent of adult size, cuspules have several discrete sizes. In *Aureocrypta*, *Tungari*, *Natgeogia*, *Questocrypta*, *Ozicrypta*, *Nihoa*, *Barycheloides*, *Moruga*, *Barychelus complexus*, some *Mandjelia*, *Encycrypta* and *Diplura*, cuspules are about 40–50µm in maximum diameter. In genera with 60 or more cuspules—*Zophorame*, *Trittame*, *Mandjelia*— and in the less cuspluate *Sason*, *Idioctis*, *Nihoa* and the

african *Ammonius*, cuspules are small and vary from 15µm in *Ammonius* up to about 34µm in *Trittame kochi*. In *Seqocrypta*, *Synothele*, *Barychelus badius*, and *Idiommata*, all of which have 0–20 cuspules, maximum diameter of cuspules is about 60µm. In *Pisenorodes*, the 2–3 cuspules reach 80µm. However, adult *Pisenorodes* are as big as or smaller than *Idiommata*, *Barycheloides*, *Tungari*. Equally, although *Ammonius* and *Sason* are among the smallest spiders herein, other genera of larger spiders have equally small cuspules. Within *Ozicrypta*, *O. etna*

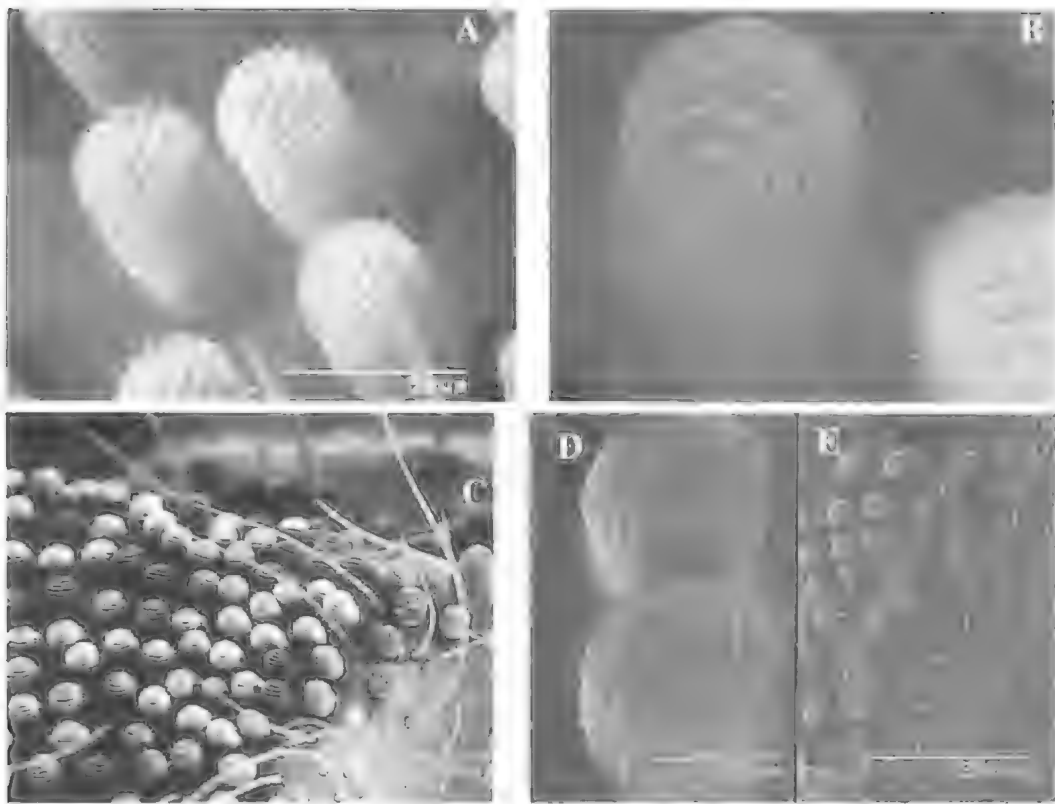


FIG. 7. Scanning Electron Micrographs: maxillary cuspules, ♀♀. A, *Natgeogia rastellata*; B, C, *Questocrypta goloboffi*, group (C); D, E, *Orstom chazeauui*.

is amongst the smallest species but its cuspules are of similar size to those of the large *O. litteorum*. Hence, there is no simple relationship, if any, between cuspule and spider size.

**Spacing.** In densely cuspidate taxa, e.g. *Zophorame* and *Trittame*, cuspules are separated from surrounding cuspules by about one diameter, whereas in taxa with fewer cuspules or even in *Mandjelia brassi*, the spacing is at least 2 diameters. Hence, number of cuspules is not a single character but a complex combination of size and density.

**Overall Shape.** Most cuspules are about twice as long as wide. In males, cuspules may be slender, pointed and even incipient to absent in some species, compared with larger blunt cuspules in females. On the outer extent of the cuspule group, pointed coniform setae-like cuspules may be evident in females which have mostly normal blunt cuspules. (Fig. 3).

Profile of cuspules varies from tapering cones (*Nihoa*, Fig. 4D, E) through pointed cones (*Sason*, *Aureocrypta*, some genera, Fig. 3E), bilaterally uniform balloons (Fig. 4G, H;

*Synothele*, most genera), and to thumb-like lobes inclined back to produce a slightly flattened upper face (Fig. 8C).

**Microstructure.** Microstructure in barychelids herein shows two basic patterns which are presumably variations on a theme. The upper portion of each cuspule and often the full length has many fine closely set ridges, 'microridges'. In some genera, ridges are parallel to the long axis of the cuspule for their length and end at a diagonal keel (*Sason*, Fig. 3E) that is also parallel to the long axis, here termed 'parallel microridges with or without sagittal keel'. Alternately, all microridges may converge at or near the apex (e.g. *Aureocrypta*, *Idiommatia*; Fig. 4A, B), here termed 'convergent microridges'. The third, most striking, and widespread condition is that all or most ridges are continuous over a smooth crest and have the appearance of thumbprints, here so termed. The thumbprint type is found also in Hexathelidae. Overall cuspule shape is a partial determinant of microstructure and that is partially reflected in outer cuspules of *Trittame kochi* cf Fig. 8A and 8B) which are long and pointed when

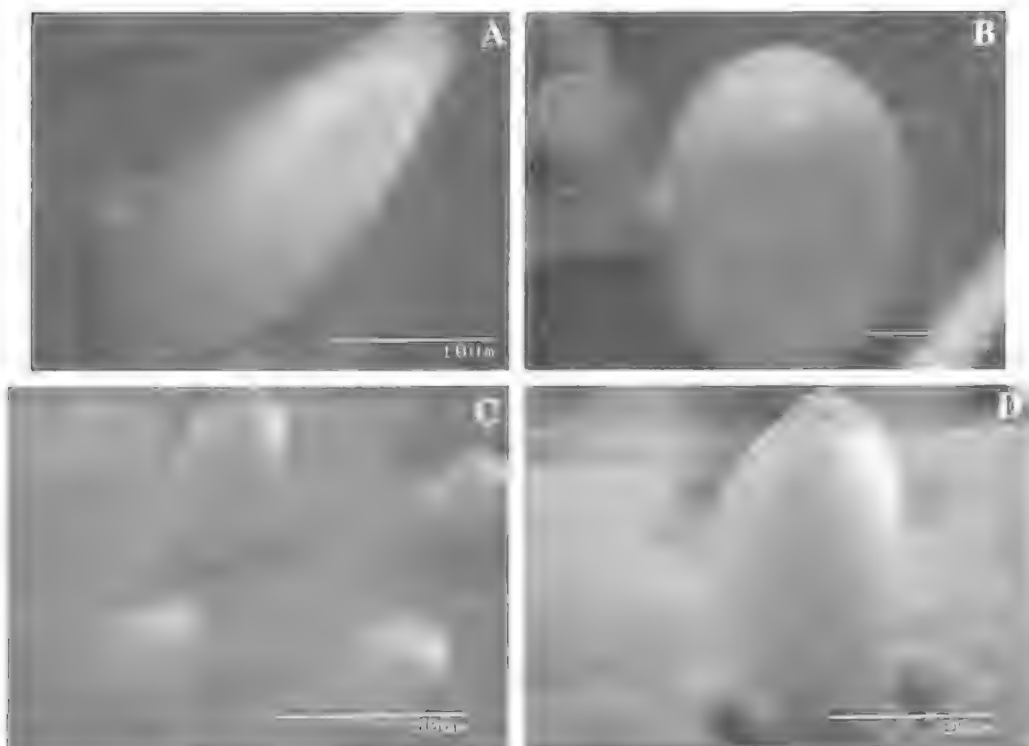


FIG. 8. Scanning Electron Micrographs: maxillary cuspules, ♀♀. A, B, *Tritame kochi*, centrally (A), on edge (B); C, D, *Zophorame covacevichae*, group (C), one lateral (D).

others are stout and blunt. Equally, the boundary of blunt and pointed cuspule apices becomes vague in some genera, e.g. *Moruga* (Fig. 9A).

The second character in cuspule microstructure is interest distance of microridges. Despite apparent diversity in those spaces, basically only two distances are present. In most taxa, adjacent crests are 0.5–1 μm apart, with most being 0.8–1.0 μm apart. In *Orstom*, *Natgeogia*, and *Ques-tocrypta*, all of which have many cuspules, interest spacing is 3–5 μm and the 'affect' is striking even at low magnification (Fig. 7C).

These characters have been assessed only nominally before. Griswold (1985) found two species groups of the microstigmatid *Microstigma-tata* had different microstructure. Both groups had similarly shaped cuspules but one had the close interest distances of many mygalomorphs and the other had wide interest distances and appeared scalloped (Griswold, 1985, figs 17, 18). Griswold (1985) found the scalloped form maxillae in the monophyletic group whereas the finely grooved form was in two paraphyletic taxa appearing basally on the cladogram of his data.

#### MAXILLARY GLANDS

Petrunkévitch (1933) noted that maxillary glands occur in 92 spider species and all are similar. No histological studies have been done here. However, a soft glandular area has been found in the anterior lateral or inner lateral face of the maxillae just above the cuspluate surface (Fig. 11C). It is assumed to be the maxillary gland and on a similar structure was found also in *Liphistius* (Liphistiidae), *Missulena* (Actinopodidae), *Hadronyche* and *Plesiothele* (Hexathelidae), *Aganippe* (Idiopidae), *Diplura* (Dipluridae), *Namea* (Nemesiidae), *Phlogiellus* (Theraphosidae), and *Fufius* and *Bothriocyrtum* (Cyrtachenidiidae), as well as in all barychelid genera herein. Goloboff (1993, fig. 22) found a special hair type in his representative barychelid *Strophaeus* and theraphosid *Cyriocosmus* as well as other groups.

#### STERNUM

The sternum shows no major modifications in barychelids. In most juvenile barychelids, it is about as long as wide and that condition is presumed plesiomorphic in adults. In *Idioctis*, it

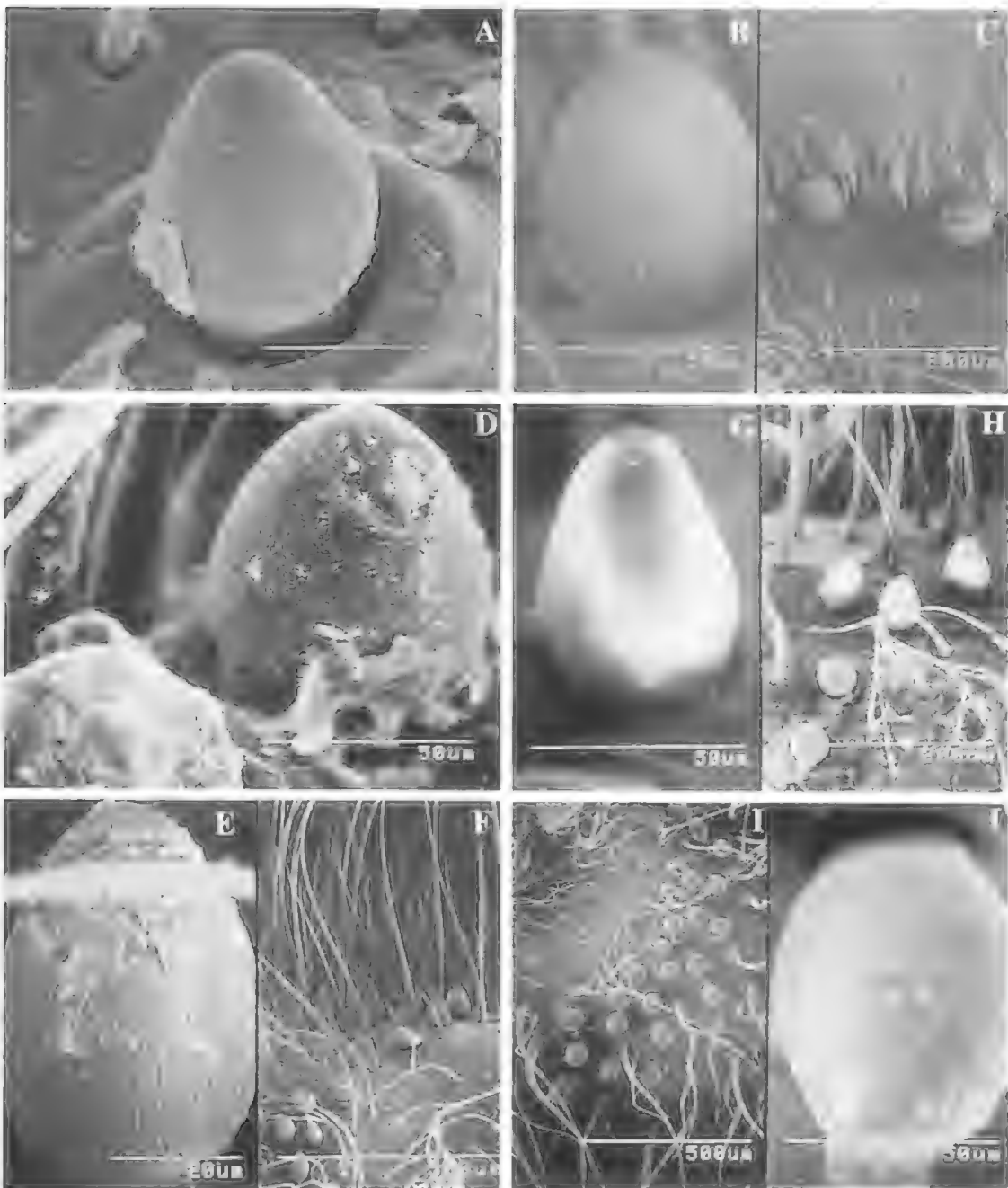


FIG. 9. Scanning Electron Micrographs: maxillary cuspules, ♀♀. A, *Moruga fuliginea*; B, C, *Barycheloides alluviophila*; D-F, *Barychelus*, *B. badius* (D), *B. complexus* (E, F); G, H, *Fijocrypta vitilevu*; I, J, *Seqocrypta hamlynharrisi*.

is very narrow (1.5 times longer than wide, Raven, 1988; Churchill & Raven, 1992) and in some species (e.g., *Mandjelia qantas*) it is also narrow. The overall shape is stable throughout the family with notable variations in *Idioctis*, as

noted, and in *Moruga* (Fig. 65D) in which the sternum widens strongly from the first to the third coxal bases.

Sternal sigilla, muscle attachment sites of extensions of the endosternite, of most barychelids



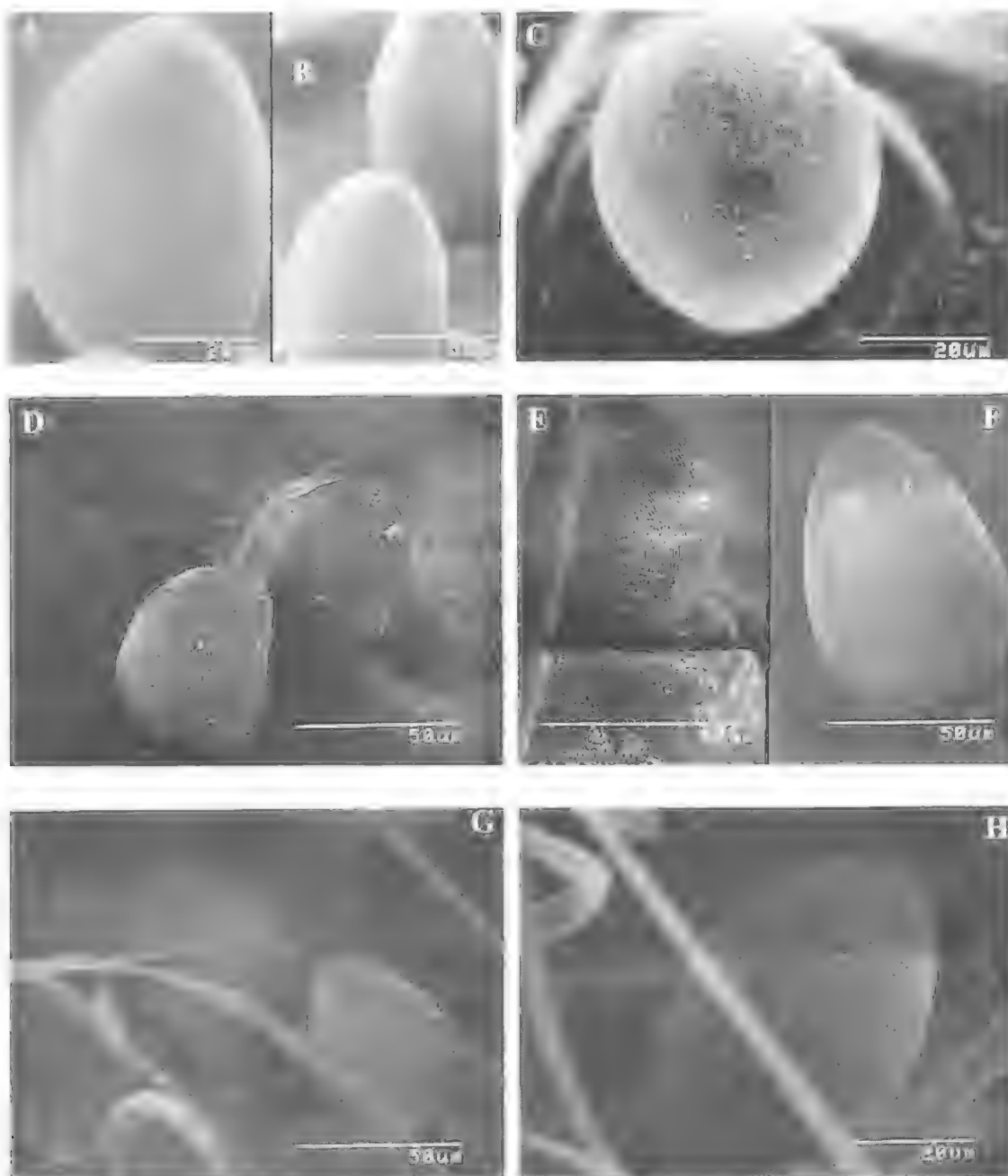


FIG. 10. Scanning Electron Micrographs: maxillary cuspules, ♀♀, *Ozicrypta*, *Nihoa*, *Synothele*. A, B, *N. karrawari*; C, *O. littleorum*; D, *O. wallacei*; E, *S. mounabie*; F, *N. pictipes*; G, *O. microcauda*; H, *O. kroombii*.

are small and marginal. The anterior pair are often difficult to see. In *Moruga*, posterior sigilla may be large and noticeably removed from margins (e.g. Fig. 61C). A single or pair of lyriform organs is just medial to each sigilla. Setation of the

sternum is strong on the margins posterior to the middle sigilla, and weaker centrally. In some groups, marginal setae are absent for the anterior half of the sternum.

## LEGS

Legs of female mygalomorphs exhibit rich phylogenetic information from cuticle microstructure, tarsal organ, preening combs, spines and claws, scopula, general setation, spination patterns up to overall size and relative lengths of legs and segments. Leg characteristics have not been explored extensively. They are significant, especially in palaeontology, where information content of legs is often overlooked.

**Relative Lengths.** Legs of female barychelids are typically stout, the length of leg I (all segments from femur to tarsi inclusive) varying between 1.4 and 2.3 times longer than the carapace length. Females of *Moruga* and some *Synothele* tend to have stouter legs, 1.4-1.8. However, relative lengths of leg segments are more informative. In most mygalomorphs, leg formula of females (relative lengths of legs from longest to shortest) is either 4123 in burrowing species or 4321 in more active groups like Dipluridae. The most significant distinction being the role of leg III. In burrowing spiders, leg III, especially the femur, is very stout and presumably locks the

In barychelids herein, the most common leg formula is 4123 with IV being much longer than I and that being clearly longer than III or IV. In *Tungari*, of which little is known of its biology, there is only a small difference between the lengths of legs I-III. In *T. mascordi*, the formula is that of active mygalomorphs, 4321. A longer leg 3 is found also in females of *Mandjelia qantas* (4312), *Synothele arakis* (4312), and *Synothele ooldea* (4321). Leg III is longer or as long as the second in *Mandjelia iwupataka*, *M. oenpelli*, *Ozicrypta digglesii*, *O. kroombit*, *O. noonamah*, *Seqocrypta mckeowni*, *Synothele arrakis*, *S. geongarie*, and *S. yundamindra*. Hence, there is no evident correlation between genus and variation on leg formulae. However, there may be a habitat correlation because, of those 13 species, nine are found in very dry inland habitats in central or western Australia. The longer leg III may provide more speed to escape predation by wasps, scorpions, or centipedes and reduce heat gain and water loss when spiders are exposed.

**Relative Segment Lengths.** The second aspect of barychelid legs is the stouter segments themselves. Simon (1892) used the character qualitatively in theraphosids to aid diagnosis of *Avicularia*. However, here the character becomes far more evident and useful. Typically, in mygalomorphs, the femur is the longest segment followed in order of decreasing length by the metatarsus, tibia, tarsus, and patella. That does

vary with the leg and is especially noticeable on III. Raven (1978) used the longer patella than tibia III of female *Bymaiella lugubris*, an unusual condition in Hexathelinae, in species diagnosis. In burrowing mygalomorphs, segments of leg III become very stout and the patella is often longer than the tibia. In females of all genera here, except *Tritame*, *Zophorame*, *Barycheloides*, the dominant (67 species) arrangement of leg segments on I and II, in order of decreasing length, is femur, patella, tibia, metatarsus, tarsus. In 10 species of 6 genera (*Mandjelia*, *Ozicrypta*, *Synothele*, *Barycheloides*, *Nihoia*, *Encycrypta*), the arrangement differs from that only in that tibia I is longer than patella I. The order femur-tibia-patella-metatarsus on I and II of females is found in *Ozicrypta digglesii*, *O. filmeri*, *Mandjelia banksi*, *M. nugaruga*, *M. iwupataka*, all *Tritame* and *Zophorame* species, *Barycheloides aluviophilus*, *B. chiropterus*, *Orstom tropicus*, *O. undecimatus*, *Nihoia annulata*, *N. annulipes*, and *N. lambleyi*. Hence, rarely is the patella a short segment on I and II and reciprocally, rarely is the metatarsus long. That becomes especially evident when the metatarsi are viewed ventrally because the ends of the segment are bevelled and the area of scopula on those metatarsi becomes very reduced. Also, the tarsi appear much broader and shorter (Fig. 13E) than in other groups.

**Setation.** Distribution of hairs on legs is quite uniform throughout the group. Lateral faces of femora may be glabrous or covered with a light pile of recumbent hairs. The dorsal ridge of the femora is normally setose. Patellae have two narrow glabrous bands, one on each upper face. Tibia have one or two glabrous dorsal ridges and trichobothria are intermixed with hairs. Glabrous ridges presumably mark points of muscle attachments as they are slightly indented and the cuticle has a pitted microstructure unlike surrounding smooth cuticle. Metatarsi may have a narrow dorsal glabrous zone; no such areas are evident on the tarsi. Setae on the legs are typically erect and articulated basally and intermixed with finer hairs.

**Basifemoral Thorns.** These are distinct short conical setae that occur on the prolateral face of femora I, II, IV, basally; sometimes they are present also on the palpal femora. They were used as a diagnostic character in *Encycrypta* (Raven & Churchill, 1991). They have only ever been found in females. Basifemoral thorns are usually distinct at 12-50 magnifications (depending on spider size) using a light microscope. They do not appear to be related to spider size, spination, or

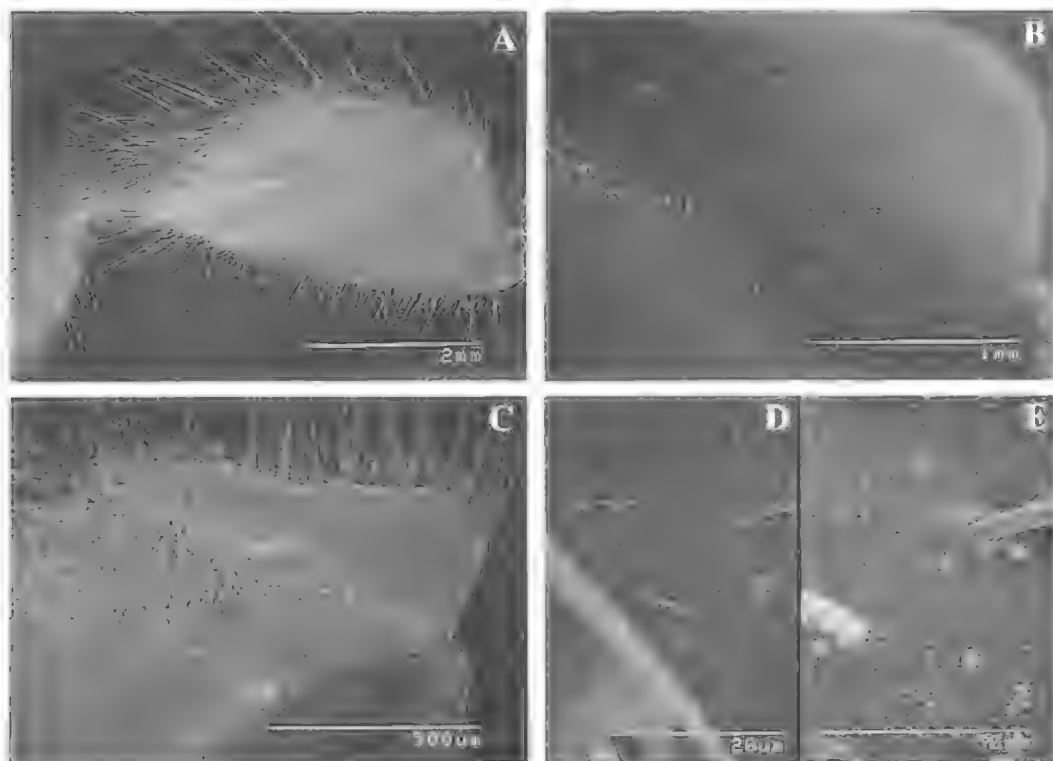


FIG. 11. Scanning Electron Micrographs. ♀♀. A, *Ozicrypta wallacei*, hirsute prolateral femur I; B, *Ozicrypta littleorum*, dorsal tarsi showing very long trichobothria; C, *Synothele moonachie*, front inner face of maxilla showing ovoid glandular region; D, E *Ozicrypta littleorum*, cuticle microstructure of dorsal tarsus (D) & metatarsus (E).

habitat. Apart from being notably absent in some genera (*Sason*, *Idioctis*, *Moruga*, *Questocrypta*, *Orstom*, *Natgeogia*, *Fijocrypta*, *Monodontium*), their presence does not seem to be correlated with other characters and hence shows little higher phylogenetic information. Sculpturing of basifemoral thorns is smooth and thus different to that of surrounding hairs, setae and spines which are all distinctly fluted. Basifemoral thorns are often present on all of femora I, II, IV (only rarely on III and the palp, and then only when they are many on I) but may be absent from II, and IV. Extent of basifemoral thorns appears unrelated to general spination or thorn spines on patellae III. Individual variation is not generally significant and hence the character remains of high value in species recognition.

**Femoral Lyra.** In mygalomorphs, stridulatory lyrae are found on the coxae of the palp (maxillae) or of legs I or II (Raven, 1985b). However, here for the first time a lyriiform structure is reported on the prolateral face of femur I (Fig. 162) of females of *Tingari* (the structure is absent in males). The lyra, or so it is presumed to be,

consists of a series of 60 rounded ridges varying from 0.2-0.7mm long diverging from an imaginary centre of a circle about 1.5mm across. Most ridges branch at about half their length. The opposing face which would seem to 'strum' these lyral ridges is simply an angle on a palpal trochanter armed with long stiff setae. No sound has been heard from these spiders so the stridulatory function is only presumed.

**Proximal Tarsi.** The proximal tarsi of males and females dorsally has a medial mound of variable height with equally wide depressions on each side. These interlock with a pair of rounded processes on the distal metatarsi. The character is widespread in barychelids and is also found in many other spider groups to varying extents.

**Thorn Spines.** Short conical spines are found along the prolateral face of patellae III, IV and often extend to the dorsal distal corner. They are complemented by similar spines or stout setae on the distal prolateral and dorsal edges of the femora III, IV (Fig. 14F). Strength, length, and number of spines varies between species. Presence of spines is not correlated with a strong

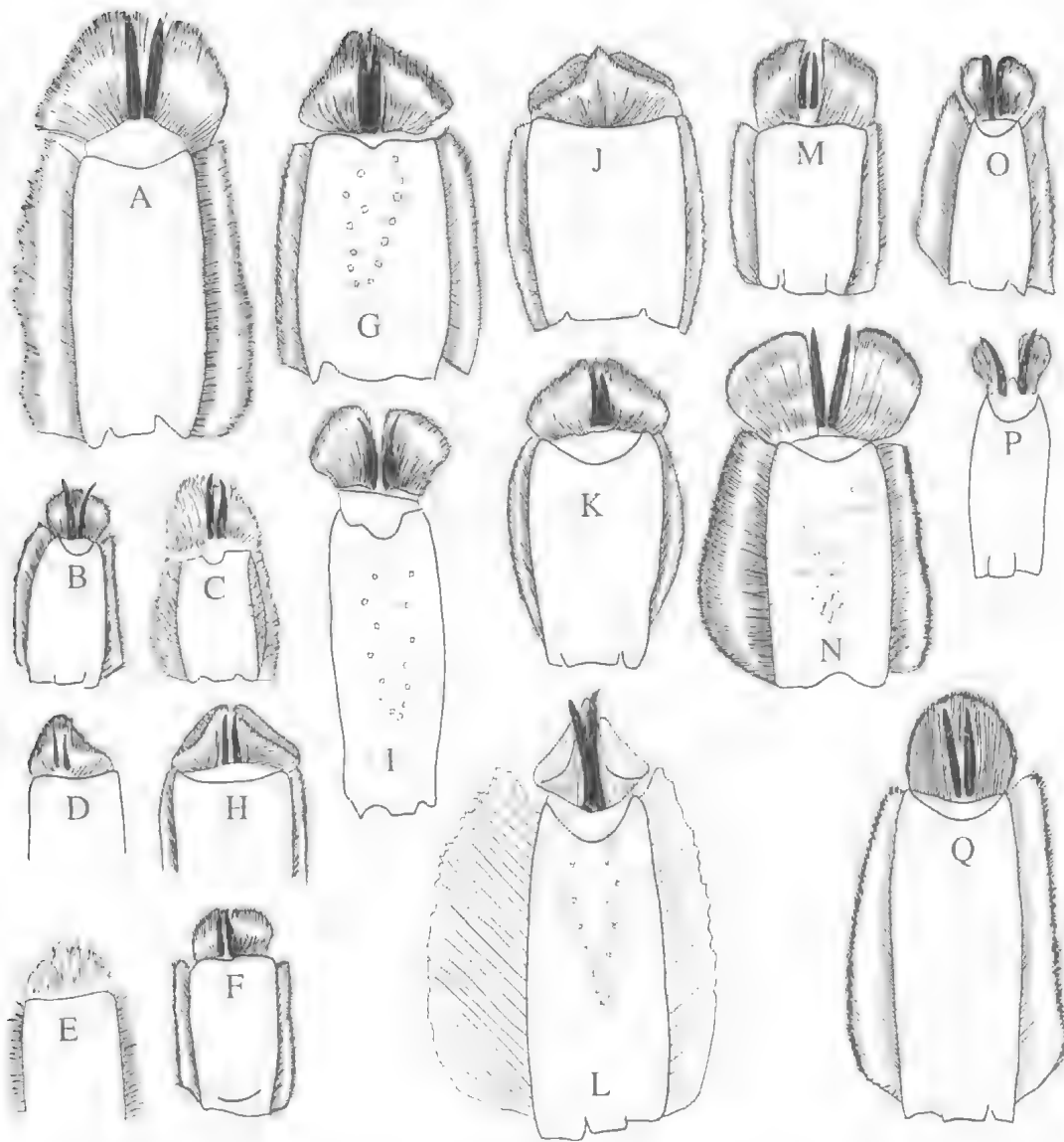


FIG. 12. Tarsus I & IV (Only as noted) showing lateral extent of scopula & claw tufts, dorsal view. ♀♀ except ♂, J. A, *Barycheloides rufofemoratus*; B, *Orstom chazeau*; C, *Barychelus complexus*; D, *Tritame ingrami*; E, *Synothele michaelseni*; F, *Seqocrypta jakara*; G-I, *Moruga*, *M. wallaceae* (G, I, leg IV); *M. kimberleyi* (H); *Idiommata* sp., leg I (J) & IV (K); L, *Sipalolasma* sp.; M, *Nihou courti*; N, *Idiocotis littoralis*; O, P, *Rhianodes atratus*, leg I (O), IV (P); Q, *Encyocrypta meleagris*.

rastellum, dry habitat, or known particular burrowing habits. They are presumably used to assist locking the spider in position in a burrow.

#### TARSAL EXTREMITY

A character that amplifies the effect of the stout or incrassate tarsi is the angle made by the tarsal extremity from its upper edge to the lower corner. The character is best seen in lateral view (Fig. 13).

In most mygalomorphs, the angle is about 50-60° (e.g. Fig 13F). Eskov & Zohnstein (1990), using only literature figures (from Gertsch & Platnick, 1980), noted that the angle in Mecicobothriidae and Atypidae was greater than 90° so that the lower edge was set back. The angle actually reaches 90° (and may exceed it, depending on the preservation) in groups with pseudosegmented tarsi, as in mecicobothriids and atypids. None

have so far investigated the character enough in those groups to weight it so heavily as Eskov & Zohnstein (1990), if indeed at all. However, in these barychelids, tarsi have the appearance of being cut off sharply at the end (Fig. 13A, B, I, J, O). That character here varies from 80-100°. The effect is increased by lack of an indentation (presumably to allow claws to reflex back) evident dorsally on tarsi of theraphosids (as in Fig. 12L). The significance of the character is not clear, it is widespread in barychelids.

The second expression of this character is evident in dorsal view of the distal tarsus, particularly tarsus I (Fig. 12). In some theraphosids (e.g., *Phlogiellus*, *Coremiocnemis*), and some barychelids (e.g. *Sipalolasma*, *Sason*, *Rhianodes*, *Orstom*), the tarsus appears spindle-shaped (Fig. 12P), i.e. narrowly tapered at both ends and distinctly broader in the middle. An associated dorsal indentation is either deep and V-shaped (*Phlogiellus*, *Coremiocnemis*, *Sason*, *Orstom*) or a wide shallow curve (*Sipalolasma*, *Rhianodes*). In contrast to the spindle-shaped tarsi are the barrel-shaped types in which the ends are broadly truncate (Fig. 12J) and the middle is only slightly broader. *Idionnata*, *Seqocrypta*, *Synothele*, *Nihou* and *Tritane* show the condition by the straight line of cuticle defining the end of tarsus dorsally; there is no evident indentation in these groups. However, in *Idioctis*, *Encyocrypta*, *Nihou*, *Barychelus*, *Moruga*, the medial indentation varies from a small V- or U-shaped indentation to a broad sweeping curve. The significance of the character is not yet clear but it is relatively stable within a genus.

#### MALE TIBIAL SPUR & MICROSPUR

The spur type widespread in the barychelids is the theraphosoid spur (Raven, 1985b) which is found on tibia I of males. The spur consists of a terminal or subterminal process, the spur, bearing a stout immovable and often sinuous spine, megaspine, that is curved up. Above the spur about medially on the prolateral face is another stout, but smaller, megaspine curved down. Near the base of that spine, a low to long cuticular process, microspur, is often found. Presumably the combination of spur, microspur and megaspines serves to hold female fangs safely above the male during mating. However, to my knowledge, no barychelids have been observed mating so the suggestion cannot be confirmed. Unlike some diplurids, hexathelids and theraphosids, in barychelids, spurs are known only on the first leg.

The spur may be present or absent. If the spur is absent, so too is the megaspine, microspur and upper megaspine. If the upper megaspine is absent so is the microspur. The first structure to be reduced or absent is the microspur, followed by the upper megaspine. The presence of a spur correlates well with other characters and is hence presumed to be of phylogenetic value. A spur is entirely absent in *Seqocrypta*, *Fijocrypta*, and is reduced or absent in *Moruga*. In all other genera in which leg I of males is known, at least a spur is present. Angle, size and shape of the spur as well as presence, size and length of the microspur and megaspine vary between species. Lack of spur in some groups is considered a secondary loss and does not falsify Raven's (1985b) hypothesis that the character is a synapomorphy of Theraphosoidea. As in many cases of synapomorphies used in my phylogeny of mygalomorphs, the theraphosoid spur is not simply one character but minimally 5 characters each based upon a separate distinctive structure and each capable of independent variation.

#### PALLID & INCRASSATE VENTRAL ♂ METATARSUS I, II

In many taxa, herein metatarsi I and II of ♂♂ are noticeably constricted in the proximal 1/4 and often pallid ventrally and incrassate for the distal 3/4. The incrassate state of metatarsi of ♂♂ are confined to legs I and II and thought to assist the maintenance of a safe position during mating. Incrassate metatarsi I and II in ♂♂ are here recorded in *Moruga heatherae*, *Ozicrypta cooloola*, *O. combeni*, *O. clarki*, *O. hollinsae*, *O. sinclairi*, *Seqocrypta bancrofti*, *Barycheloides rufifemoratus* and *B. rouxi* and *Nihou mambulu*.

#### PALLID & INCRASSATE ♂ Tarsi I-IV

Tarsi may be slightly bowed upwards, incrassate and also ventrally pallid. The character may be on all tarsi or only on tarsi III, IV, as the case of some females. The condition is thought to be a precursor to 'cracked' and 'pseudosegmented' tarsi (Raven, 1985b) found in other mygalomorphs but not reported here in Barychelidae (*Trichopelma* and *Psalistops* are exceptions which will be dealt with elsewhere). Pallid and incrassate tarsi do not have the same occurrence as incrassate metatarsi. The condition may occur on all tarsi and may be found also in females, notably on tarsi III, IV. They do occur in all males with incrassate metatarsi. This tarsal condition is almost universal in *Synothele*, *Tritane*, *Seqocrypta* and *Moruga*. It is found also in



males of *Mandjelia brassi*, *M. humphreysi*, *M. paluma*, *M. platnicki*, *M. rejue*, *Oziocrypta cooloola*, *O. combeni*, *O. clarki*, *O. hollinsae*, *O. microcauda*, *O. sinclairi*, *Encyocrypta mckeei* and *E. risbeci*, *Orstom chazeau*, *Nihoa courti*, *N. lambleyi*, and *N. mambulu*; and females of *Mandjelia brassi*, *Encyocrypta mckeei*, and *Nihoa bisianum*. In none of these species is any sign of 'cracked' cuticle evident.

#### SPINATION

The distinction between weak spine and spine was not resolved by Coyle's (1974) introduction of the terms 'attenuate' and 'ensiform macrosetae'. Strength of spines is often of lesser consequence than recognising a weaker homologue. Spines in mygalomorphs are generally so numerous and variable as to reduce their value in species level taxonomy to a morass of statistics (see Raven, 1978). In female *Hadronyche* (Hexathelidae) from Queensland, spine variation was examined on both sides of over 100 females (Raven, unpublished). Variation in that genus is so high (20-40 spines on the same face of left and right legs) that often the most remote points in graphical plots were the left and right counts of one individual. That is not to say spination characters are not of value. Raven (1978) used them with success in Hexathelinae. However, use of spine counts introduces procedural dilemmas.

Absolute determination of a spine's location, i.e. dorsal or lateral, lateral or ventral, as well as the question of whether it is ensiform or attenuate in practice greatly increases both the length of the description and the time used to make it. In giving a spine count here and elsewhere, unless a condition is remarkable and of possibly teratological origin, I give only the values for one side of the spider. This may not express the total variability of the character across the species but more critically it does preserve the relative numbers of spines on the animal. For example, to say that spines on the femora vary from 0-3 prolaterally and 0-5 dorsally (fe p0-5, d0-5) masks the possibility that in small specimens the condition may be fe p0 d0 and in larger ones, fe p5 d5 (see *Moruga wallaceae* comparison of holotype and smaller paratype). Here and in all of my descriptions, I use spines simply as a guide and I normally record spines from only one side of one specimen. In araneomorph taxonomy, a number of formats are used to describe spination. In my experience in mygalomorphs, a different format would be necessary for each genus or tribe, at

best. Probably, a totally different format would be required for males of each group to accommodate the typically vast increase in spination of males compared to their conspecific females. Again, the potential value from such an exercise is very limited. Hence, a simple solution is retained and described completely under Materials and Methods. In mygalomorphs, it is basic patterns of spination that are here considered the most significant phylogenetically (Raven, 1985b) and potentially useful in assisting family placement of their fossils.

Spines of most female barychelids are weak on legs I, II and stronger on legs III, IV. The basic spination pattern of females is as follows (rare case in parentheses): leg I, fe p1, pa 0, ti v0-2w, me v0-1; leg II, fe p1, pa 0, ti p2, v2, me p0, v2; leg III, fe p1, d1(-5), r1(-3), pa p1(-3), r1, v0(-2), ti p2, r2, v7-10, me p2(-4), r2(-4), v6-10; leg IV, fe d1, r2, pa r1, ti p0(-2) r(0-2), v6-10, me p2(-5), r2(-6), v6-12; palp, fe p1, d0(-5), pa 0, ti p0(-1), v2-7. Note that typically prolateral spines on metatarsi are usually present only on legs II-IV. Often spines are very weak if not absent on legs I, II. Spines are weak, short, and distal, if present on ventral metatarsi I, II. No spines are present on the leg tarsi of male or female barychelids; spines are rarely found on the female palpal tarsi (e.g. *Mandjelia macgregori*; never on the cymbium) and are then useful species characters. Equally rare and useful are many spines prolaterally on tibiae and metatarsi I and II of females of *Orstom chazeau*. Spines on legs III and IV of female barychelids tend to be stronger than on I and II. Spines ventrally on the patellae are unusual in theraphosoid mygalomorphs but not rare in barychelids. In females of many barychelid species, the base of each leg femora bears a long slender setae or weak spine. In barychelids, slightly thick setae in females are evident as strong spines in the equivalent position in males.

Microstructure of barychelid spines is similar to other mygalomorphs: many longitudinal, angular ridges often with saw-tooth crests, each ridge has many very fine oblique 'nanoridges' which form complementary angles on opposing faces giving the appearance of herring bones.

#### PREENING COMBS

These are grouped setae set on a separate mound distally on the lower surface of the metatarsi. To my knowledge, their actual use in 'preening' has not been documented; the term was introduced by Simon (1892). In any case, they are similar in microstructure to other setae

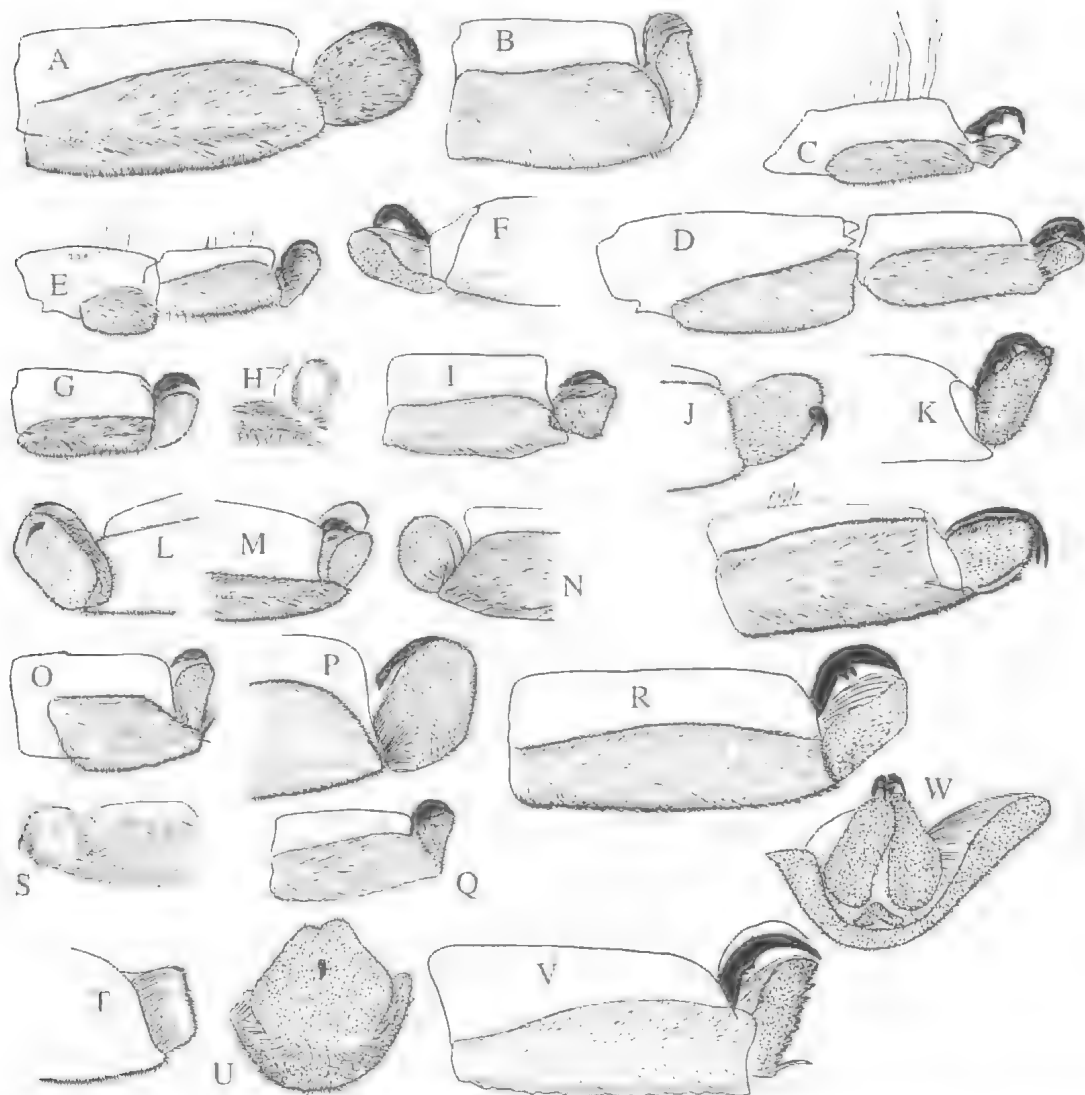


FIG. 13. Tarsus & metatarsus I-IV (Only as noted), prolateral view showing profile of tufts & height of scopula. ♀♀ except H. A. *Barycheloides rufifemoratus*; B. U. *Idiommatia* sp., axial view or 'face' of tuft (U); C, D. *Rhianodes atratus*, leg I (C), IV (D); E, F. *Moruga wallaceae*, leg I (E), IV (F); G. *Orstom chazeau*; H. *Synothele michaelsoni*; I. *Nihoia courti*; J, K. T. *Idiocerus littoralis*, leg I (J), IV (K), palp (T); L, M. *Tritame ingrami* leg I (L), IV (M); N. *M. kumberleyi*; O-Q. *Sequecrypta jakura*, leg I (O. ♂), (P, Q. ♀, retrolateral, Q). R. *Encyocrypta meleagris*; S. *Barychelus complexus*; V, W. *Sipalolasma* sp., axial view or 'face' of tuft (W).

on the metatarsi but differ in that their bases are so closely placed in a line that they form a linear mound. In diplurids, they are found on metatarsi I-IV (Raven, 1984a). However, in barychelids herein, they been found only on metatarsi III and IV. If preening combs are present they are found at least on the retroventral corner of distal metatarsi IV, often on III, and rarely also on proventral corners of metatarsi III and IV. The character is reasonably stable in each species but unlike spines are best developed in females. In

conspecific males, comb setae are weaker and fewer, if present. The common condition is 3 closely set setae. Sometimes one outer seta is short giving the appearance of 2 setae; in well developed combs, a fourth seta is also present. The character is useful in species identification but shows no generic or higher information content, as yet.

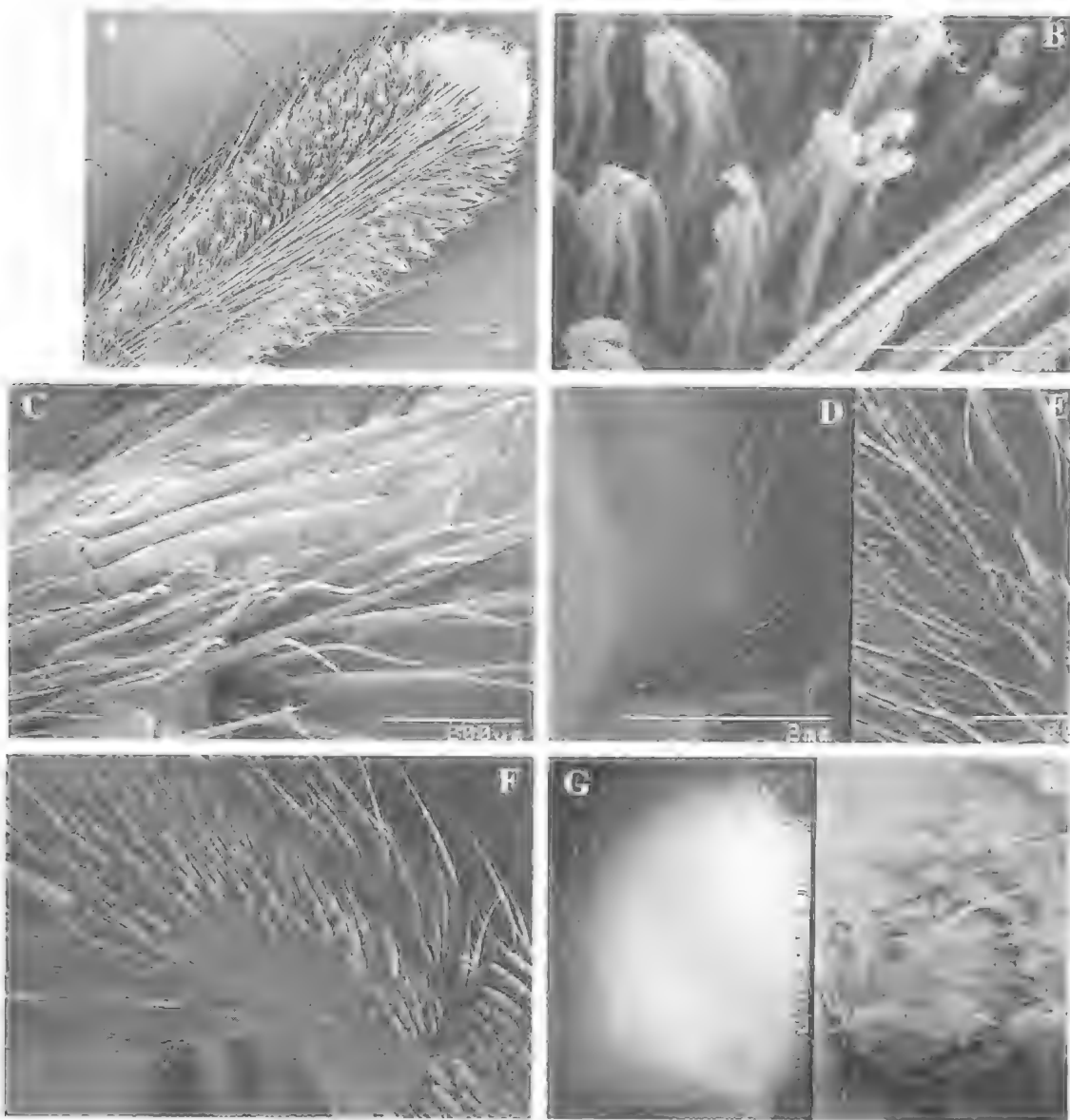


FIG. 14. Scanning Electron Micrographs. ♀♀, except G, H. A, B, *Seqocrypta jakara*, ventral tarsus III, showing scopula & dividing setae; C, *Tungari muscordi*, metatarsus III, showing preening comb of 3 setae on common mound; D, E, *Ozicrypta microcauda*, basifemoral thorns on prolateral femur I; F, *Ozicrypta luteorum*, prolateral femur & patella III, showing thorn spines; G, H, *Synothele michaelsoni*, ♂, intercheliceral tumescence basally on prolateral chelicera.

#### SCOPULA

Leg scopula is a key diagnostic character of Theraphosoidea (Raven, 1985b) and yet none prior that appear to have tried to document differences in mygalomorphs and allow their accurate, recognisable and repeatable description. Scopula hairs are erect and orthogonal to the cuticle surface. Distal microstructure in

barychelids (Fig. 14B) is that of highly fimbriated surface and provides maximal contact area. Functional significance of scopula, if any, in mygalomorphs has not been established. Scopula are dense and common on legs of desert animals but they occur also in tropical rainforest species. Theraphosid (*Selenocosmia*) males press the scopulate surface of their tarsi and metatarsi I and

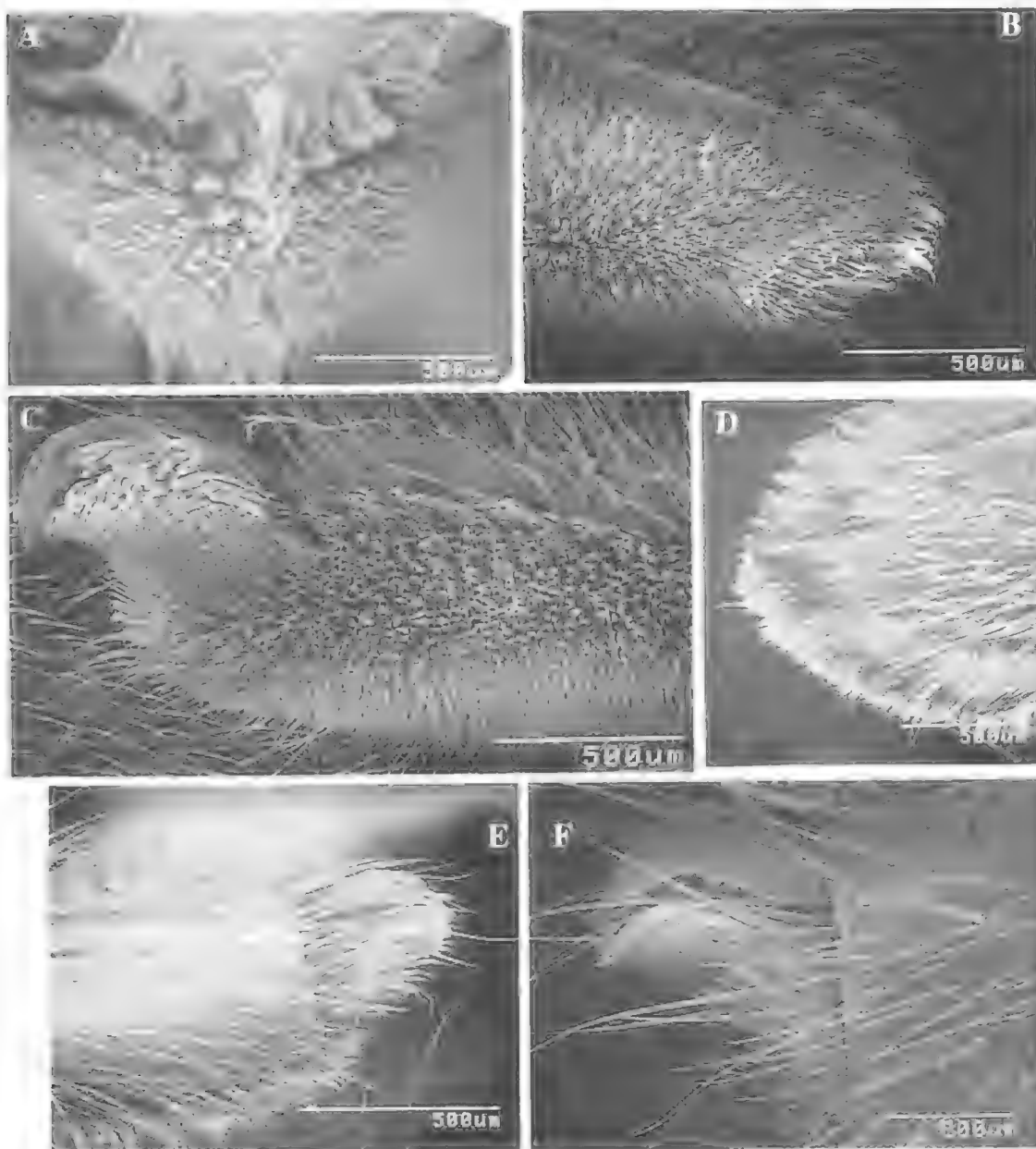


FIG. 15. Scanning Electron Micrographs. ♀ palpal tarsi showing only scopula (A-D) & claw tufts (E, F). A, *Rhianodes atratus*; B, *Sipalolasma* sp.; C, *Öziocrypta kroombit*; D, *Pisenor* sp.; E, *Mandjelia platnicki*; F, *Synothele moonabie*.

II along lateral faces of the carapace of females during mating (pers. obs.) presumably to minimize movement. Scopula may also serve to better hold prey. Presumably, mygalomorphs that must pull prey into their fangs may use tarsal claws to hook the leading edge of a retreating animal. Because adherent hairs occur on the metatarsus, the effective reach of the spider is substantially

extended. More studies are needed on prey attack in mygalomorphs before these notions can be tested. It is unlikely that scopula normally aid holding onto smooth surfaces in nature because the angle at which the tarsi meet the substrate is usually greater than 60°. In any case, acquisition of scopula in theraphosoids is considered to be an

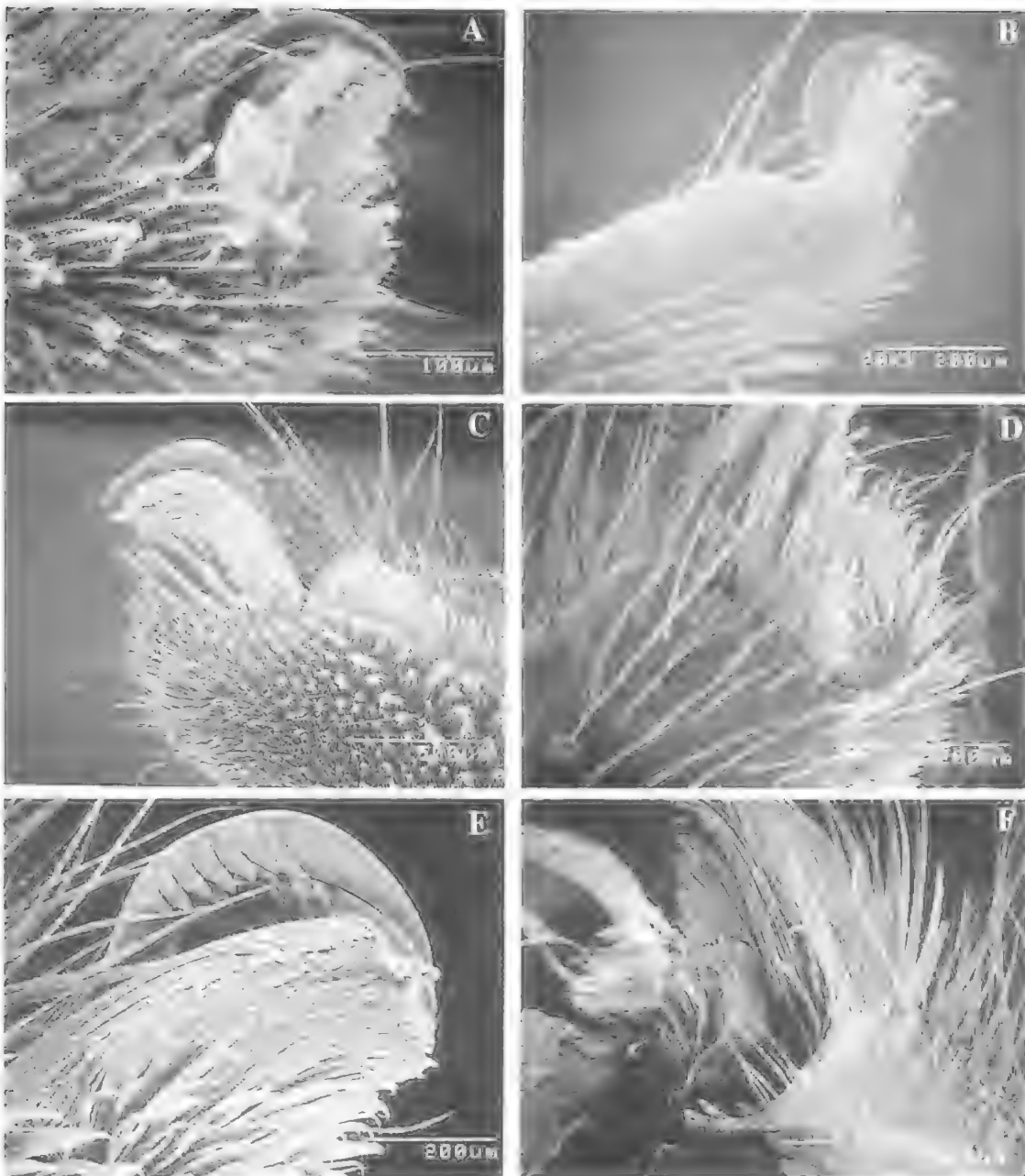


FIG. 16. Scanning Electron Micrographs: tarsi showing claw tufts, relative size of claws & claw dentition, ♂ ♀ except E. A, *Sason colemani*, leg I; B, *Monodontium* sp.; C, *Tungari mascordi*, leg III; D, *Trittame kochi*, leg I; E, *Mandjelia thorelli*, ♂, leg I; F, *Synothele michaelseni*, leg I showing very small claws.

historical event in the group's phylogeny and functional applications of leg scopula followed.

In barychelids, a scopula may be found on the lower surface of metatarsi and tarsi I-IV. In most species, a scopula is well developed and extensive ventrally on legs I and II, but limited to distal

parts of metatarsi III, IV, and medially divided by setae on tarsi III, IV. Many variations occur on that theme, however. Some species with small adults (carapace length, 1-4mm) are very lightly scopulate, if at all. Large adults of different species vary from lightly scopulate, even on legs



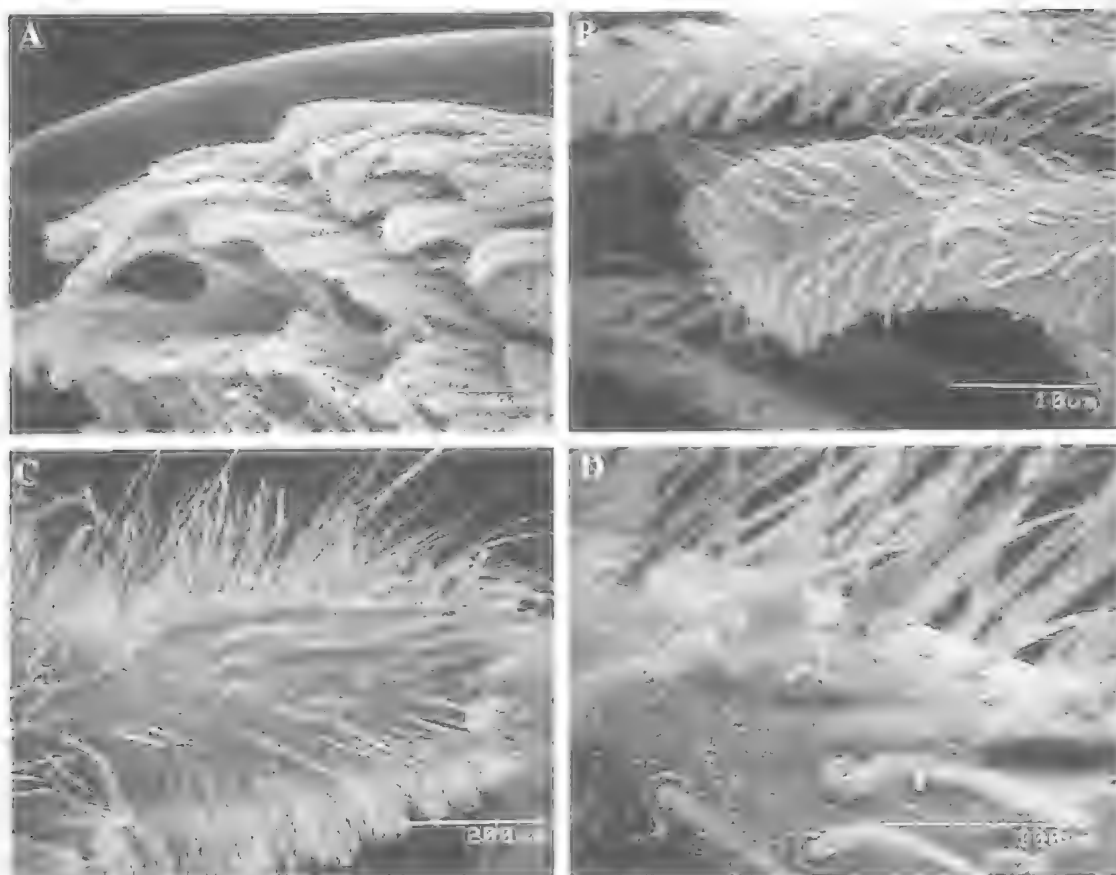


FIG. 17. Scanning Electron Micrographs. ♀ tarsi. A, B, *Turgari mascordi*, flattened fimbriate tuft hairs (A, B) & lower smooth setae (A); C, D, *Sason colemani*, showing medial clavate trichobothria & smooth cuticle.

I and II, to densely scopulate. Scopula extent and density decreases from the first to the fourth leg. Raven (1985b) noted similar anterior-posterior gradations in other characters (tarsal organ, claws, spination, and scopula) on legs. Descriptions of barychelids here reveal many specific examples of such a trend.

On legs I and II, scopula covers usually the entire lower half of the segment ('full') if not more. Equally, linear extent of metatarsal scopula is significant. On metatarsi I and II, viewed ventrally, scopula of some species extends more basally on the prolateral than on the retrolateral face and thus appears to cross the segment diagonally.

Microstructure of scopula hairs in barychelids differs substantially from that of claw tufts (see below). Macroscopically, scopula hairs arise from the surface of the sclerotised cuticle whereas claw tufts arise from discrete sclerotised

'islands', one on each side of the claw pair (see Raven, 1986). Scopula hairs have a long cylindrical shaft with many filaments along their length (Fig. 14B). Each filament arises in a narrow serial band not spirally as might be expected. Filaments become more closely spaced distally and the scopula hair ends sigmoidally with a cluster of filaments.

Distribution, density and constitution of scopula (including the setal band that divides them) is a useful species character. Some patterns, moreover, are evident at the generic level. For example, most females of *Mandjelia* species lack scopula on metatarsi IV, whereas in sympatric species of *Trittame*, scopulae are present, if weaker.

#### CLAW TUFTS

Presence of claw tufts is a synapomorphy for Theraphosoidea although claws tufts do occur as

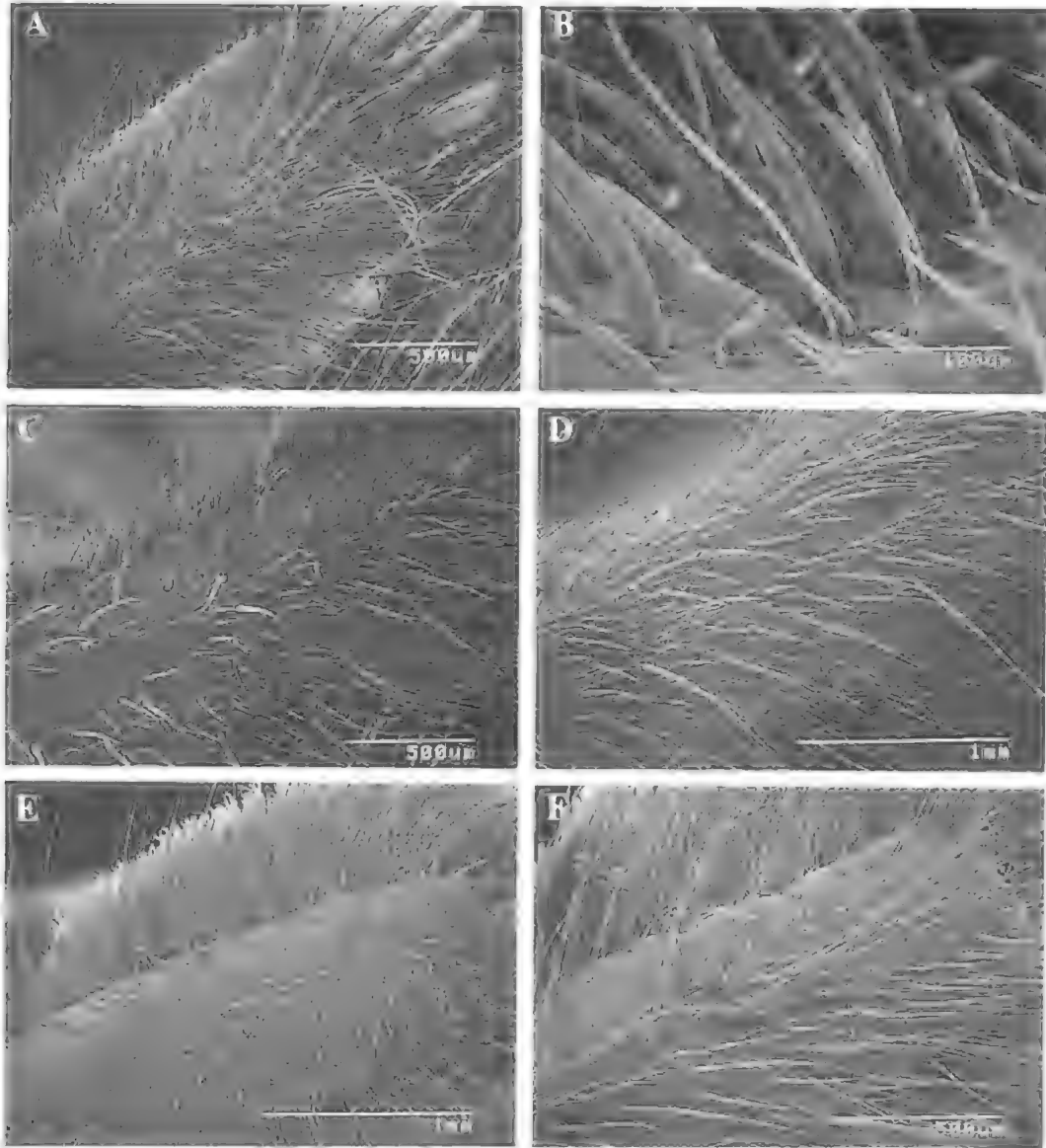


FIG. 18. Scanning Electron Micrographs. Trichobothria. A-D, *Ozicrypta kroombit*. A, B, dorsal tarsi showing divided rows (A) & close-up (B) of long filiform (lower centre) & small clavate (right centre) trichobothria; C, dorsal metatarsi showing trichobothrial row curving to lateral (lower right) face at mid-length; D, prodorsal tibia showing curving rows; E, F, *Sipalolasma* sp.; E, prodorsal metatarsus showing straight row; F, dorsal tarsi, showing long filiform trichobothria in 2 rows.

isolated cases in other mygalomorph families (Raven, 1985b). Claw tufts are similar on all legs of the same individual and no distinct difference is evident between tufts of males and females of a species. Tuft hairs are long, curved and flattened and originate from one of a pair of ovoid islands of cuticle on each side of the claw group. The microstructure of the tuft hairs is different to that

of the scopula. For most of their length, tuft hairs are flattened with a continuous dense multi-layered field of fine filaments; and the hairs terminate abruptly (Fig. 17A, B). Claw tufts allow smaller barychelids to adeptly climb smooth vertical glass faces and are presumably equally useful in scaling and clinging to smooth leaves,

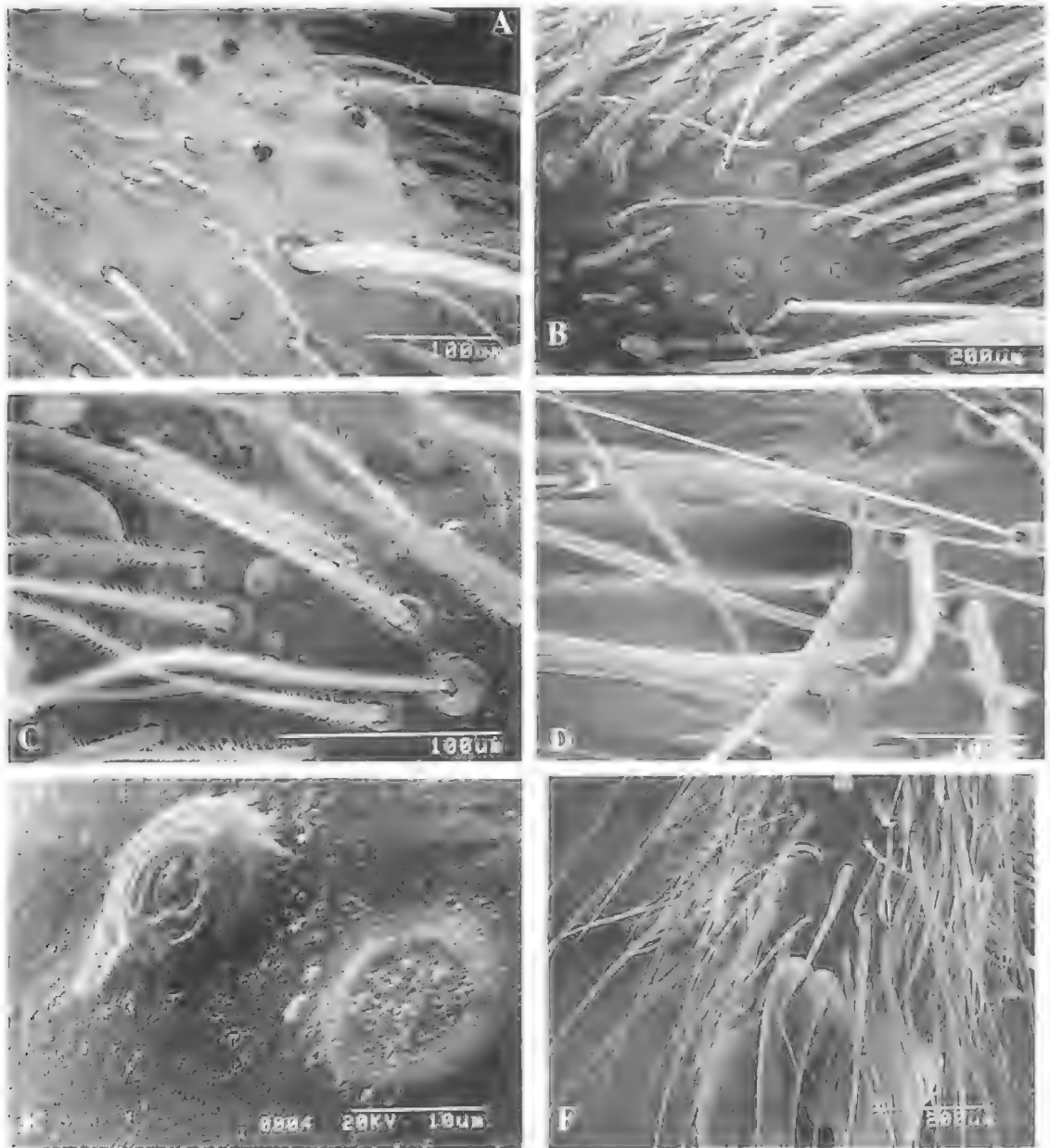


FIG. 19. Scanning Electron Micrographs. Tarsal organ, ♀. A, *Melloina* sp. (Paratropididae); B, *Phlogiellus* sp. (Theraphosidae); C, *Sason colemani*; D, *Sipalolasma* sp.; E, *Monodontium* sp.; F, *Psalistops* sp.

stones, and paper bark trees (*Melaleuca* species) in times of flooding.

Claw tufts are under muscular control and can be extended also by hydrostatic pressure. Hence, under preservation, tufts may be everted or retracted which makes comparative description difficult (see Fig. 12A, J, H). Tuft height was

measured against distal tarsal diameter and variation was small. However, comparative size of tarsal claws and tufts can be used and easily estimated. In most species, tops of claws are evident above tufts; in some species, claws are significantly smaller. However, two characters on tufts remain difficult to quantify: shape of the

'face' of the tuft and overall profile. Profile can be compared only using tufts in identical degrees of retraction, the most variable result of preservation. The 'face' is the axial view of the tuft; its lateral profile face may be sharply or irregularly defined, or straight, sinuous, or curved in or out. Its appearance under alcohol is substantially different to that under SEM vacuum but only the former is of practical use. The overall shape of a tuft is like a long curving conoid with truncate apex (origin) and irregular base ('face'). Shape of the 'face' presumably gives tufts iridescent flashes so characteristic of barychelid tarsi, e.g. *Idiommatia scintillans* Rainbow & Pulleine, 1918 and *I. iridescens* Rainbow & Pulleine, 1918.

#### FEMALE PALPAL CLAW TUFTS

In attempting to define different shapes and sizes of tufts, an important phylogenetic character emerged. Claw tufts on palps in females resemble those on legs in most significant respects and they are present in all barychelid genera found in Australia and the western Pacific. (In males, palpal claw tufts are a diffused pad spread across the two lobes of the cymbium.) However, through a fortuitous loan from AMNH suggested by Pablo Goloboff, I checked a collection of well preserved female *Sipalolasma* from Sri Lanka for the outgroup state of size and shape of palpal claw tufts. However, *Sipalolasma* lacks palpal claw tufts which is true of several other barychelid genera (see below). Palpal claw tufts are present also in theraphosoidine families that have leg claw tufts, theraphosids and paratropidids including *Melloina*. However, I have found no palpal claw tufts on any araneomorph group in which legs have claw tufts nor does the character appear in the claw-tufted nemesiids, *Neodiplothele*, and '*Brachythele*' *incurva* Chamberlin, 1917. Hence, the character is independent of leg claw tufts and here considered highly significant. Implications of the discovery will be discussed elsewhere.

In barychelids, palpal claw tufts are absent at least in *Rhianodes*, *Sipalolasma*, *Cyphonisia*, and *Sason* and weak in *Cosmopelma*, and *Monodontium*. In those genera, scopula hairs distally on the palpal tarsus are very long and extend out to cover the claw (Fig. 15A-D). Palpal claw tufts are readily evident by change in hair density and the discontinuity formed by the origin.

#### CLAWS

Unlike some theraphosids, no barychelids have a third or unpaired claw on the leg tarsi. Hence, lack of a third claw remains a synapomorphy.

albeit very homoplasious, for Barychelidae as defined by Raven (1985b). Paired claws on leg tarsi are either normal in size or very reduced. In females of *Idiommatia* and *Aureocrypta*, and most *Synothele*, paired claws of legs I and II are about half the size of those on legs III, IV and concealed deep in claw tufts (Fig. 16C). In contrast, in Madagascan diplothele genera, all claws of females are reduced in size. In *Synothele*, males do not show any strong claw reduction of their conspecific females. In *Synothele pectinata*, the female has all claws of normal size. Because all other characters suggest it is *Synothele*, the condition is considered to be a reversal. The reduced claws are also indicated in that they are hidden deeply within claw tufts, whereas normal-sized claws are evident from the side or above. Similarly, the palpal claw shows reduction in size and the smaller claw is evident in females of several genera (e.g. *Idiommatia*, *Nihoua*) both globally and locally within species groups.

Dentition of paired claws presents valuable variation between groups. The outgroup of barychelids and theraphosids is nemesiids (Raven, 1985b) which have two rows of teeth on the paired claws (biserial dentition) of males and females. Males of many barychelids and some plesiomorphic theraphosids, as well as females of the barychelid genera *Troglothele* and *Monodontium*, also have biserially dentate paired claws (Fig. 16B, E). Raven (1985b) hypothesised that biserial dentition in theraphosoids is a plesiomorphic retention which is lost first in females. In female barychelids, except *Troglothele* and *Monodontium*, paired claws (all legs are similar) have few small teeth set on the medial keel (Fig. 15F) or on outer faces of claws; most female theraphosids lack teeth on all claws. Most male barychelids have biserially dentate paired claws (Fig. 16E) or can be readily shown to have had that condition in their recent phylogenetic history. In any case, biserial dentition in male barychelids is most parsimoniously considered a synapomorphy of those genera with it. *Monodontium* lacks palpal claws tufts and hence must be considered the outgroup of those genera with them; that position is further reinforced by biserial dentition in its females if Raven's (1985b) hypotheses is considered. The hypothesis passes further a test in that female *Idiocerus* have teeth on the outer face of claws—the first step in the reduction—and males have biserial dentition. In contrast, in the more derived genus *Nihoua*, females have teeth only medially on paired claws and males have lost biserial denti-



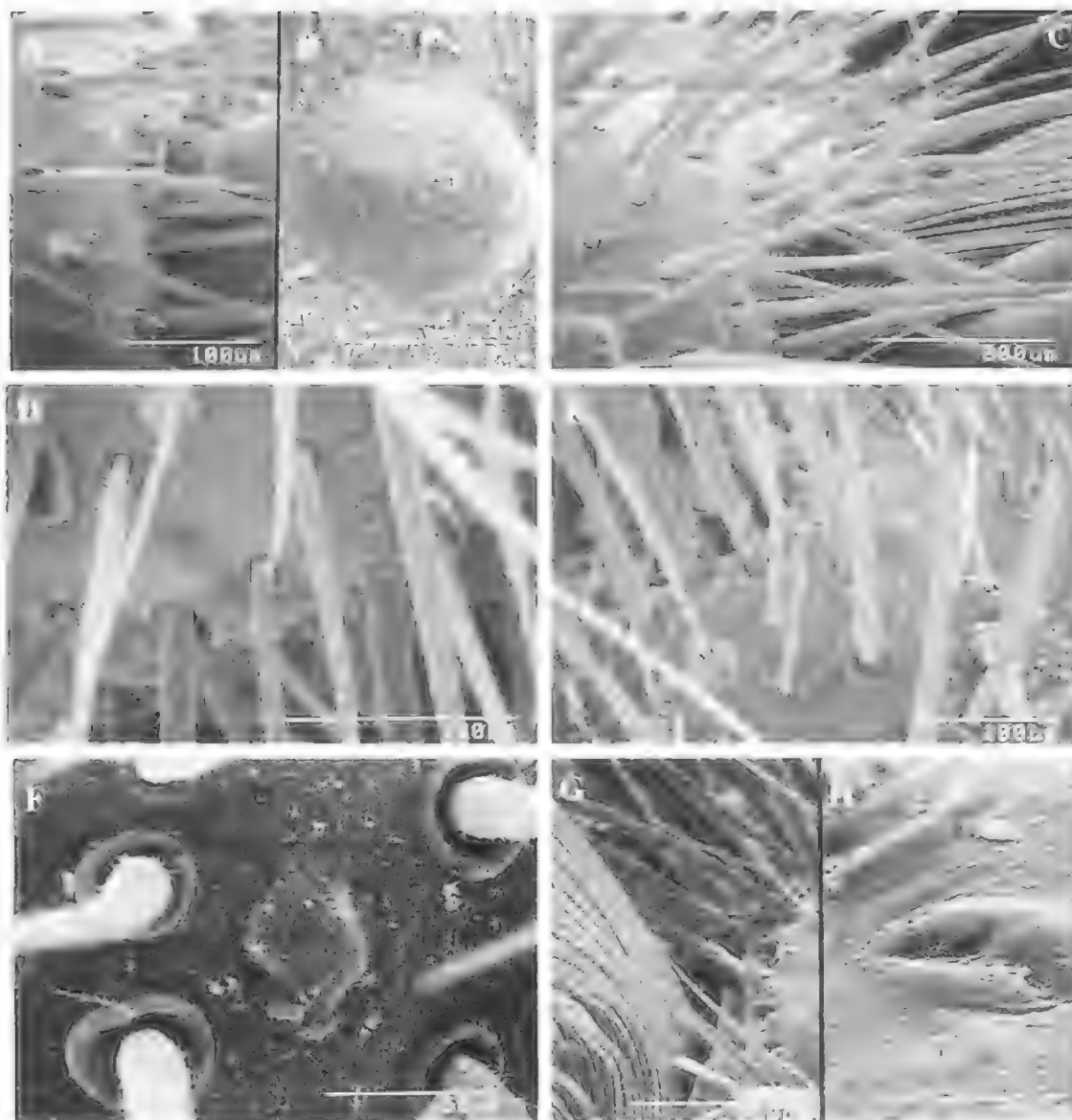


FIG. 20. Scanning Electron Micrographs. Tarsal organ, ♀. A-C, *Mandjelia*. *M. platnicki* (A, B), *M. brassi* (C); D, *Questocrypta golobuffi*; E, *Moruga fuliginea* (juvenile); F, *Synothele michaelsoni*; G, H, *Tungari mascordi*.

tion completely (Churchill & Raven, 1992), the final step in a transformation series. Hence, from strong evidence, the plesiomorphic state of claw dentition in theraphosoids was presumably biserial. That condition is still evident in *Troglothele* and *Monodontium*. In other barychelids, females first lost one row of teeth and retained one on a lateral face while males unchanged. Subsequently, the remaining row in

females became medial and biserial dentition was lost in males.

In males, paired claw dentition shows anterior-posterior gradualism only in that leg IV usually has fewer teeth than I; number of teeth rows does not vary as in nemesiids in which only one row is present on leg IV of some species (Raven, 1985b).

#### TARSAL ORGAN

In barychelids, the tarsal organ is, with one known exception *Tunguri* (Fig. 20H), a low mound with concentric rings (Figs 19-21) surrounding a small pit. The profile of the mound and number and depth of rings varies; overall size varies from about 15-50  $\mu\text{m}$ . The most variable feature of the tarsal organ is the distal profile. In some species (Figs 19B, F, 21D), the distal face is steep if not curved back whereas the proximal edge is a shallow slope and the pit is clearly off-centre; that is termed the 'asymmetrical wave' form. In others, the tarsal organ is more or less smoothly domed like the top of a sphere with the pit placed centrally; that is the 'symmetrical domed' form (Fig. 21A).

A more significant feature of the tarsal organ is its position on tarsi. In nemesiids, the tarsal organ is set well back ('remote') from the edge of tarsi (Raven, 1985b) and the same is evident in the paratropidid *Melloina* (Fig. 19A) and the theraphosid *Phlogtellus* (Fig. 19B). However, in most barychelids, the tarsal organ is very close to the end of tarsi ('marginal', within one or two of its own diameters) and in some taxa is on the subvertical edge itself (Figs 20G, 21G). Taxa proposed plesiomorphic by other characters, e.g., *Sason*, *Sipalolasma*, and *Monodontium*, have tarsal organs remote (Fig. 19C-E) whereas they are marginal in more derived taxa.

#### LEG CUTICLE SURFACE SCULPTURE

In barychelid genera and species surveyed, only *Ozicrypta littleorum* (Fig. 11D, E) shows any marked surface sculpturing of leg cuticle. In all other groups, the cuticle is smooth.

#### TRICHOBOTHRIA

In all theraphosoids, trichobothria occur on the tibiae, metatarsi and tarsi of all legs and the palp. On tibiae, trichobothria occur in two rows that begin on the 'equators' (true lateral) of tibiae proximally. At this point, trichae are short and closely spaced (Fig. 18D) and evident in a narrow glabrous zone. The two rows converge quickly to the dorsal ridge where trichae are longer and widely spaced. From that point, usually at the basal quarter, the rows remain more or less parallel, trichae become longer but they are not in a glabrous zone but intermixed with setae and hair. Tibial trichobothria may occur for the length of the tibia but usually are not present past the distal third quarter. In most mygalomorphs, metatarsal trichobothria are present along the dorsal ridge. In barychelids, trichobothria on metatarsi 'begin'

basally on the retrolateral face and curve at varying rates, depending on relative width of joint, up to the dorsal ridge where they form a single irregular line reaching to the end; sometimes the distal end of the band is a wide cluster of trichae. In some groups, the trichobothrial band is glabrous, often it is not. Neither tibiae nor metatarsi have clavate trichobothria.

Trichobothria on tarsi form two irregular lines diverging distally. In many genera, trichobothria basally on tarsi are clearly different in length, and overall shape. They are here termed 'clavate' but in most groups are only weakly enlarged apically and only in *Sason* (Fig. 17C) and *Idiocotis* have I noted apices even remotely enlarged as much as those characteristic of theraphosids. Also, these trichobothria never occur for the full length of the tarsus, as is true of theraphosids; clavate trichobothria in barychelids, if present, are always about 4-6 in number and occur more basally than long filiform trichae evident distally. This provides further characters to both separate and cladistically diagnose Theraphosidae and Barychelidae.

#### MALE PALP

Only two parts of the palp appear to show significant variation: the cymbium and the bulb itself. The palpal tibia does not become bulbous or bear processes. The cymbium is spinose and distally cleaved into similar or dissimilar lobes. In genera herein, one lobe is maximally subcircular and the other ovate; in none does the dimorphism reach the extent of that in *Ammonius* (Raven, 1985b). In most genera, the two lobes are subequal in size. The significance of the dimorphism is unclear. Also, the lateral faces of the cymbium are straight, concave or convex, when it is viewed from the true dorsal. That character varies between species.

The palpal bulb arises orthogonally from the midventral cymbium as the small basal haematodocha joins to a small tegulum. The distal portion of the bulb, as in most theraphosoids, is roughly conical. In most genera, the embolus is short and often bears few to many small or large keels that spiral to the tip. Form of bulb is relatively stable within the genus. *Mandjelia colemani* is the only species with a significant deviation from that common in the genus. It has a long paraembolic apophysis (Fig. 38H; and see Raven, 1978) whereas in other *Mandjelia* species the bulb appears quite simple in structure. *Idiomata* species all have a very similar bulb which is large with two high keels twisting to a deeply

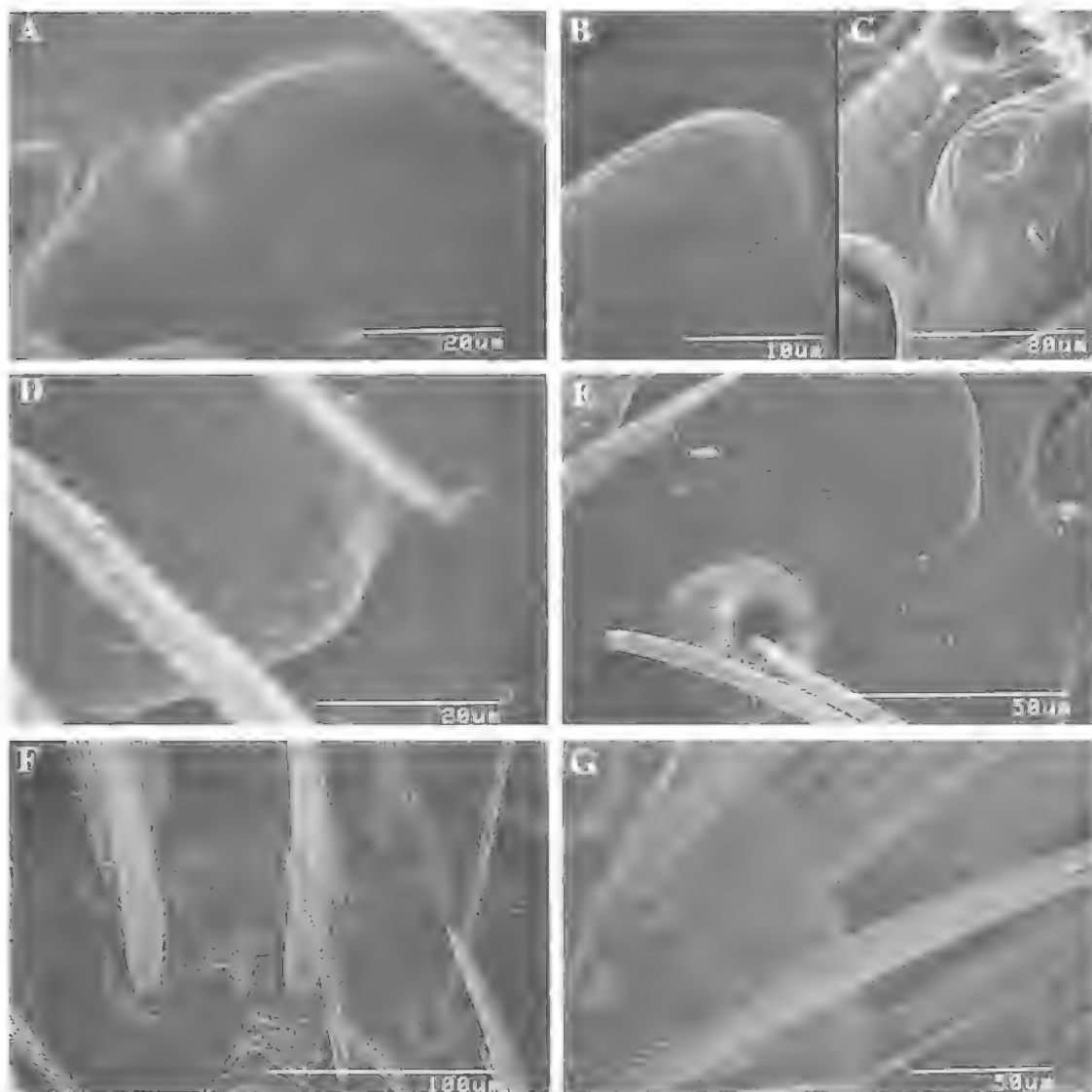


FIG. 21. Scanning Electron Micrographs. Tarsal organ, ♀ except C. A, *Sipalolasma* sp.; B, *Fijocrypta vitilevu*; C, *Ozicrypta etna*, ♂; D, *Ozicrypta littleorum*; E, *Ozicrypta kroombit*, showing corrugiform bothrial base; F, *Ozicrypta microcauda*; G, *Psalistops* sp.

folded embolic tip. The condition is not found in other barychelids although bulbs with small keels are common. In *Synothele michaelsoni* and *S. mullaloo*, keels are distinctly serrated (Figs 122, 141C).

#### ABDOMINAL PIGMENTATION

Dorsal abdominal pigmentation takes three main states: entirely of one colour, pallid or black, 'monocolorous'; irregularly mottled without discernible pattern; with herringbone pattern of

brown bands on pale yellow or yellow bands on brown background. The monocolorous state occurs in all *Idiommatata* (black), *Idioctis* (pallid), some *Nihoa*, and one species each of *Ozicrypta*, *Encycrypta*, *Aureocrypta*, *Moruga*. As such, the character state is informative. All other taxa herein have either irregular mottling or the herringbone pattern. Most theraphosids lack abdominal pattern and mottling. Hence, the monocolorous state is presumably apomorphic in

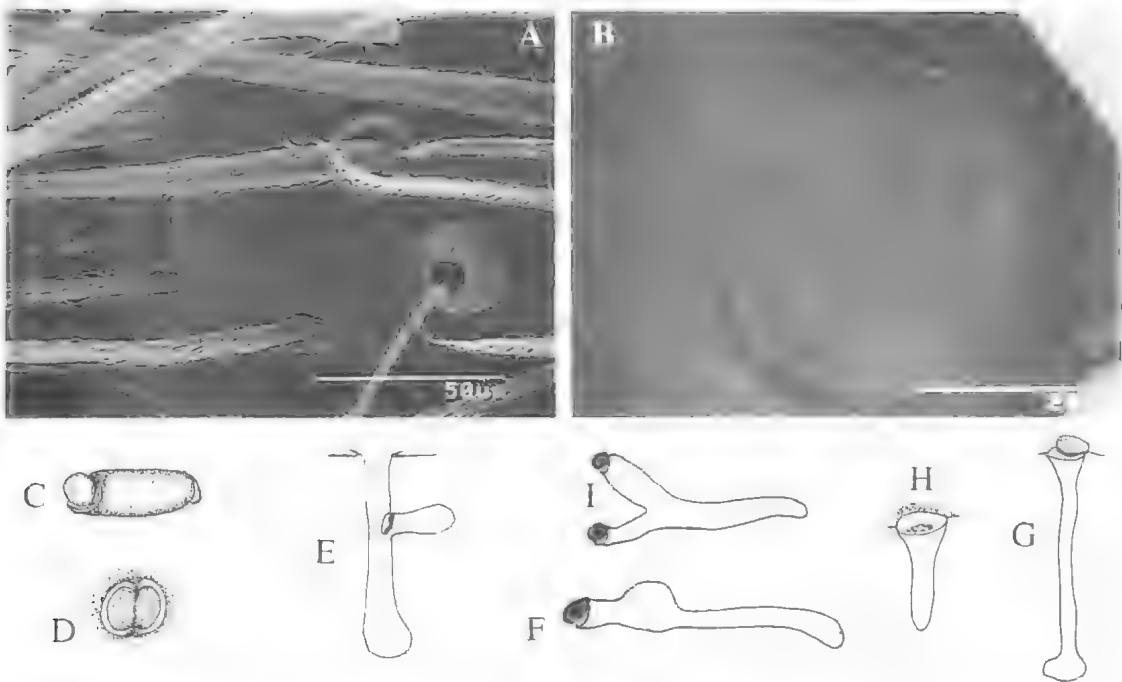


FIG. 22. Scanning Electron Micrographs, tarsal organ, ♀, A-B. A, *Orstom chazeauui*; B, *Barycheliodes aluviophilus*. Barychelid burrow types, C-H. C, barrel-shaped nest with 2 doors; D, *Sason* nest with abutting doors on trees; E, open tube with concealed sideshaft; F, sinuous tube with door; G, simple sinuous tube with door; H, open burrow; I, Y-shaped burrow with 2 doors.

theraphosids and barychelid taxa first mentioned above.

Ventral abdominal pigmentation is slightly different and not always correlated with dorsal pattern. In all isolated species and some *Nihoa* species with monochorous dorsal abdomen, the ventral abdomen has pattern. Venter of *Idiommata* and *Idioctis* species are concolorous with their dorsum. The most evident ventral pattern in barychelids seems to be a brown V on a pale background (e.g. Fig. 78F).

#### INTERNAL GENITALIA

Internal genitalia of barychelids consist of a pair of spermathecae. The genital fold is not produced, as in *Namirea* (Dipluridae; Raven, 1984b) or *Namea* (Nemesiidae; Raven, 1984a), but is a gently curving edge between the book-lungs. Spermathecae were found in four different basic shapes. The plesiomorphic condition, because it is widespread in many genera, is here termed the 'antennate domed' form. It consists of a broad low mound (one on each side) with a slender erect lobe arising from the outer edge (Fig. 219G) or from the ventral face (Fig. 104F); the two conditions are presumed homologous.

The smaller lobe joins with the dome which then opens to the exterior. Uniquely in *Tungari*, the outer slender lobe has a darker sclerotisation near the neck (Figs 164F, 165C). The other apparently plesiomorphic condition is the 2 + 2 condition (e.g., Fig. 58G; *Mandjelia* and *Trittame*) which received much controversy previously (see Raven, 1985b). Spermathecae consist of two lobes arising directly from the epigastric furrow and hence all directly accessible from the exterior. These tend to be very small in size compared with the antennate domed condition. The third state is Y-shaped lobes (*M. iwupataka*, Fig. 46D); the two lobes are similar and fuse to a common duct which then opens to the exterior. The fourth state is, on each side, a single lobe longer than wide (Fig. 52E), and rarely a low mound (Fig. 79G). Finally, there are the convoluted lobes of *Seqocrypta jakaru* (Fig. 113E) and to a lesser extent in *Moruga* (Fig. 68F). A single medial lobe, as in some theraphosids (e.g. Gerschmann de Pikelin & Schiapelli, 1966), has not been seen in any barychelid genus. A glandular layer is evident around all spermathecae examined, as in all mygalomorphs known.



## RECOGNITION OF SUBADULT ♂ MYGALOMORPH

The recognition of the subadult male in life is one of the most useful field skills because the male can then be reared to maturity in captivity. The araneomorph condition of a swollen cymbium is not evident in immature male mygalomorphs until very late in the penultimate stage. The best indication I have found is the setation pattern around the genital aperture. In immature stages of male mygalomorphs, setae around the genital aperture are short and radially 'focussed' on a pallid, lightly setose or asetose centre on the medial axis on the edge of the genital furrow. That pallid centre is evidently the discharging area of the epiandrous glands (see Marples, 1967). In females, the setae around that same area are all similarly long and parallel to the long axis of the spider (Fig. 77D) and the area may be tumid (Fig. 54E).

## BOOKLUNGS &amp; ASSOCIATED INVAGINATIONS

A pair of narrow transverse glabrous strips are evident medially of the posterior booklungs (Fig. 226E). In *Nihoa gressitti*, the abdomen is so enlarged that the strips are recognizable as deep muscle attachments (sigillae). There appears to be no evidence of a large sigilla dorsally or anteriorly on the abdomen, as in the idrioid *Idiosoma sigillatum* (see Main, 1957). In other taxa, the width of the sigilla grooves vary depending on the distension of the abdomen.

## SPINNERETS

Barychelids have maximally four spinnerets: the large three-jointed posterior laterals and the small, median, digitiform, single-jointed posterior medians. As in all mygalomorphs, the basal segment of the posterior laterals has an inner subsegmentation (Raven, 1985b). In barychelids, the basal segment of the spinnerets is typically about twice as wide as long. The middle segment is about 1.5 times wider than long; and the apical segment of all taxa herein is stoutly domed. In many species, the posterior median spinnerets are absent or very small. When they are well developed, the mid-width of the posterior median spinnerets is about 0.3 times that of the basal segment of the posterior laterals. Their length, in most cases, is at most half that of the basal segment of the posterior laterals. Also, the posterior medians tend to be conical in shape, being their widest at or near the base and tapering from there to the apex. However, in three species of *Nihoa* (*N. annulata*, *N. maior* and *N. annulipes*) and *Barycheloides*, the posterior median

spinnerets are almost as wide and long as the basal segment of the posterior laterals and they are distinctly spindle- to barrel-shaped (Figs 172F, 212B, 213D, 226E). Small spigots are present on the lower surface of all segments of the posterior laterals, and around the entire crown of the apical segment; no enlarged 'pumpkiniform' spigots have been seen in Barychelidae. No spigots are evident on the posterior median spinnerets of barychelids.

Posterior median spinnerets reduce to a small sclerotised 'cap' or dome (Figs 130G, 136G, 139E) in several species of *Synothele*; in some cases, the cap is evident only because of setae clustered apically on it (Fig. 130G). Species without posterior spinnerets are here reported in *Ozicrypta*, *Synothele*, *Zophorame*, *Nihoa*, *Mandjelia*, *Monodontium*, and *Barychelus*. Species with reduced posterior median spinnerets are also found in those genera. Hence, the conclusion that posterior median spinnerets have been reduced and lost independently several times is inescapable.

## BIOLOGY

## BURROWS

Barychelid burrows vary from temporary silk cells to complex burrows with concealed doors; most are not very deep (i.e., more than 40cm). Contrary to Main (1976, p. 75), many barychelids do not build doors on their burrows. In a number of *Synothele*, *Mandjelia*, *Ozicrypta*, *Encyocrypta*, *Sason*, and probably *Monodontium*, the 'burrow' is simply a short barrel-shaped nest of silk with a soft door at each end (Fig. 22C). Those burrows may be found in leaf litter attached to the underside of logs, rocks, or leaves (most genera), attached to a tree (*Encyocrypta cagou*), within rotting logs, or built into a shallow depression in the tree with abutting doors flush with the bark surface (*Sason*, Fig. 22D). The first modification of that would seem to be the subterranean Y-shaped burrow with two external doors (*Mandjelia banksi*, *Segocrypta jakara*, Fig. 22I). In some *Encyocrypta*, the burrow may lack doors (Fig. 22H, e.g. *E. aurea*) or may have a thick door (Fig. 22G; *E. bouletti*, *E. mckeei*, *E. kortae*); and *E. oubatche* which builds in the soft bark of *Melaleuca* paperbark trees. Other genera with species that build simple sinuous subterranean tubes with thick or thin doors are *Barycheloides*, *Barychelus*, *Orsiom*, *Mandjelia*, *Ozicrypta*, *Zophorame*, *Tingari*, *Rhianodes*, and *Nihoa* (Churchill & Raven, 1992). *Ilioctis* species all

make simple burrows with one door but in different intertidal and near littoral substrates from mud, though mangrove trees and logs, to coral rock, and ironstone boulders (Churchill & Raven, 1992). Finally, some species (*Trittame*, some *Idiommata*, presumably *Barychelus badius*) build burrows without exterior doors, and the entrances are thickly 'clothed' with leaves. A short side-shaft arises at the horizontal from the main shaft from which it is separated by a thick plug door (Fig. 22E). *Idiommata* also builds a shallow flask-shaped burrow with the thick door opening directly on the surface (Fig. 22K).

The burrows are found in a wide diversity of microhabitats. Many are found on embankments but none here have been recorded in banks of creeks, rivers or streams either in Australia or New Caledonia (contrary to Main, 1976, p. 88); some have been found on trees near watercourses. That contrasts with idiopids (pers. obs.), nemesiids (Raven, 1984a), diplurids (Raven, 1984b), and hexathelids (Raven, 1978) that are often found on the banks of watercourses in rainforest or closed forest. By far, barychelids are most commonly found on a flat or sloping forest floor. No genus seems to be found exclusively in one habitat.

Because the number of barychelid burrows in embankments remote from waterways often outnumber those on gently sloping ground and those, if any, near waterways, Main's oft repeated suggestion (e.g. Main, 1976, p. 77; Main, 1993) that doors are an anti-flooding adaptation, seems to lack support, except possibly in Western Australia.

#### HABITAT

Barychelids are found from the littoral and supralittoral zones, through open sclerophyll forests, vine thickets and rainforest. The dominance of rainforest endemics (35% from that habitat) in species herein is considered only a result of unbalanced attention directed at that habitat in northern Australia. Recent collections from the dry forests around Rockhampton and Townsville yielded far more barychelids than expected. Much more attention needs to be directed at vine thicket habitats in northern Australia before a reasonable comparison of habitat richness can be made. Only few barychelid genera are known to be habitat endemic: *Orstom*, *Natgeorgia*, *Questocrypta* and *Barycheloides* in New Caledonia; *Rhianodes* in Singapore and Malaysia; and presumably *Monodontium* in New Guinea and Singapore.

*Idiommata* is commonly considered a xerophilic group but the Queensland Museum holds material from vine thickets and dense tropical rainforest, as well as open eucalypt forest.

#### BEHAVIOUR

Very little is known of barychelid behaviour. Much of what is written is based upon Main's experience in arid Western Australia (see Raven, 1982). The insubstantial nature of the two-doored nest suggests that its spider builders move and rebuild the nest. I have observed a female of *Seqocrypta jakara* active diurnally metres from its burrow. The capture of females of *Oziocrypta*, *Mandjelia* and *Encycrypta* in pitfall traps supports the notion that females are not sedentary. Most barychelids are not easily prompted into an attack position and nor will they rise up the burrow in response to probes in the burrow, as is the case in idiopids (pers. obs.). Most do not attempt to climb vertical surfaces although many can. No drag line is used. In captivity, females rise from the burrow to seize offered *Tenebrio mollis* (Coleoptera) adults and withdraw into the burrow to feed; no rejectamenta were evident. The burrows are not cluttered with debris or exuviae although fresh exuviae have been found loose in the burrow. *Mandjelia banksi* was evidently undisturbed by torch light while repairing a burrow at night; one burrow was infected by a fruiting body fungus resembling *Nannuraea atypicola* (Deuteromycotina).

One pillow-shaped white sac of between about 20-80 eggs is kept in a sac. Pigmented young of *Encycrypta aurea*, *E. nukeei*, and *Orstom aquninie* were found with the adult female still resident. Five relatively large young (carapace length about 3mm) of *Idiommata* were found with a female. Adult *Seqocrypta jakara* have been kept in captivity for 3 years. The longevity of large barychelids presumably approaches that of theraphosids and idiopids, 20-30 years (Baerg, 1958; Main, 1976).

#### PHENOLOGY

The maturation periods of male barychelids in eastern Australia and New Caledonia seems not to reflect predictions based on Western Australia (e.g. Main, 1967). Herein the capture date of the male is assumed to roughly reflect the maturation date. In New Caledonia, heavy rain falls between December and May and most males were found in May. One was found in January (*Barycheloides alluviophilus*), February (*Encycrypta kwakwa*), July (*B. alluviophilus*), Sep-

tember (*Encyocrypta* spp., *B. rouxi*). November (*B. rufifemuratus*), and December (*Oratom chazeauui*). Males were taken in pitfall traps between October and February. From New Caledonia, limited collections made in May 1992, and good collections in October 1988, yielded no males. Of those, all but one record, of 5 males from a low vine thicket, are from rainforest.

In New Guinea, males were taken in January and June (2), and one each in April, May and September. In Australia, the maturation times are much less informative. Most *Synothele* males were taken between March and June with some being found in July (1 species), August (2), September (2), October (2), November (1). In *S. michaelsoni* alone, the range was March to August.

From data in Queensland Museum registers, some patterns are evident. About half the arachnid collections of the Queensland Museum are made between October and January of which over 50% are made in December. A second peak in collecting occurs in April. However, the two most productive months are March (31 species-date combinations) and May (35) which together account for about 33% of all male barychelids taken. The next most productive month is December (23). Hence, peaks in numbers of males taken run against the trend of collecting bias.

*Idiommatata* males in Queensland have been taken in almost all months but most are taken from December to June. *Mandjelia* males are found from August until April. *Ozicrypta* males are found in all months. Best collections of species are *Seqocrypta jakara*, in Brisbane suburbs, and *Mandjelia commoni*, in north Queensland. Single males of *S. jakara* have been taken by the public in all months with a mode of 5-7 males per month. Lowest yielding months are February and July (2), and October and September (4); the peak month is May (12). *M. commoni* males are taken only by collectors of invertebrates. Two males were taken in April, one in November, and one in December-January. Clearly, there is no pattern of maturation of male barychelids in eastern Australia contra Main (1967, 1976); males can be found in all seasons. However, of species endemic to rainforest, males of 50% of species are taken from March to June.

#### DISTRIBUTION

Barychelids occur Australia-wide except Tasmania and south coastal New South Wales and Victoria. Contrary to Main (1976, p. 76), they do

occur well south of Brisbane near Kempsey and they are found in inland parts of Victoria and New South Wales (Fig. 28, 109).

#### ENVENOMATION

Only four barychelid species are known to have bitten humans. *Idiommatata blackwalli* varies from 'extremely poisonous' (Main, 1967) to 'poisonous' and 'Non-lethal, local reactions only...' (Main, 1976, p. 279). Sutherland (1983, p. 235), however, reports only local pain and swelling. Specimens of two species of *Mandjelia*, *M. brassi* and *M. paluma*, and *Ozicrypta littleorum*, bit their collectors with only minor local pain for 10-20 minutes. No studies are known on barychelid toxins.

#### PREDATORS & PARASITES

I have noted the large (total length c. 20-30cm) scolopendrid centipede *Ethmostigmus* in burrows of *Idiommatata blackwalli* and *Ozicrypta kroombit*. In excavating the burrow of *Ozicrypta kroombit*, the centipede had clearly broken through the burrow at its deepest point. In the case of *Idiommatata*, the female had leapt up about 2-3cms out of its burrow, presumably in fleeing from the centipede. That also suggests that the centipede did not enter the burrow down the open tube but also broke through. Given the vulnerable nature of the two-doored burrow, predation by litter feeding birds would seem possible. In New Caledonia, *Encyocrypta* species are common in the reserve for the endemic rainforest litter hunting bird, Cagou (*Rhynochetus jubata* Verreaux & Des Murs, 1860). However, Cagou researcher at Rivière Bleue, Mr Y. Letocart, was able to categorically reject any suggestion that this bird was a predator of barychelids or any other spider. Evidently, the bird is too slow in hunting to catch spiders and even when offered spiders did not take them. Mygalomorph remains are not known from Cagou faecal pellets. Equally, no reports of barychelids are known from studies on the food of birds (Barker & Vestjens, 1990). Only one barychelid *Ozicrypta cooloola* was found in the nest of a pompilid wasp. Presumably, many species fall prey to insectivorous mammals, especially bandicoots (see Main, 1976). However, the spider may be as big or bigger than some smaller mammals.

#### ECOLOGICAL BIOGEOGRAPHY

Mygalomorphs are an ancient group. The oldest fossil now dates back to the Triassic (Selden & Gall, 1992). Fossils from Dominican

umber (30–40 mybp) are very similar to living species in that region today (see Raven identification in Wunderlich, 1988). Despite their antiquity, however, and apparently conservative evolution in some areas, these studies have shown quite clearly that in Australia all taxa in the group have responded to environmental change. Each genus and species group responds to different extents, e.g. in the Migidae, 2 genera clearly reflect the prolonged connection of the Norfolk Rise with New Zealand but not with New Caledonia which unequivocally shows closest faunal affinities with eastern Australia. This discussion is based on the Australian barychelid fauna, with brief digressions to New Caledonia for contrast.

#### RESPONSE TO DISTURBANCE

Mygalomorphs are large and long-lived animals of the forest floor. They are the largest of spiders and have been kept in captivity for over 20 years. They lack the aerial dispersion powers well known in the annual web-spinning spiders (e.g., Darwin, 1845). Presumably, these facts along with their terrestrial burrowing habits led early arachnological biogeographers to use this group first among the spiders (e.g., Pocock, 1903). These attributes place the mygalomorphs in a primary position to identify and monitor degrees of disturbance. Web-building and vagrant spiders may quickly recolonize a burnt or otherwise badly disturbed areas (Koponen, 1993). However, dispersion in most mygalomorphs occurs only when young leave the maternal burrow. Hence, mygalomorph colonisation can occur only after at least one generation has dispersed away from a lesser disturbed adjacent area. Despite the attributes, neither mygalomorphs nor any spiders have been used as the primary focus of the biodiversity of a continent.

In areas of several hectares in apparently homogenous forest habitats, mygalomorphs show highly localised distributions (pers. obs.). Environmental conditions also seem uniform. Hence, they often fail to rank in randomised sampling techniques widely employed in ecology.

Groups that build nests under fallen logs (e.g. *Bymainiella monteithi*, Hexathelidae) may noticeably increase initially after an area is logged. Increased frass and broken logs increase the number of available nest sites and movement of other disturbed invertebrates ensures adequate food. In contrast, in apparently intact rainforest at

Mt Spec, NEQ, I found the ground spider fauna was very depauperate. In a lower, less disturbed area only 2 km away, ground spider diversity was high.

Barychelids are one of the few mygalomorph groups that appear to persist in suburban areas. Most notable is *Attax* and *Hadronyche* in Sydney. However, those areas are strongly intermixed with less disturbed areas like deep sided creeks, near natural rock outcrops. Raven (1984a) reported *Nomea dahmsi* (Nemesiidae) from marginal areas of southern Brisbane bordering immediately on native forest. Diplurids *Namirea planipes* and *Australothele jamiesoni* were also reported from Brisbane (Raven, 1984b). Only the latter occurred in non-marginal suburbs that are close to a wide creek (Kedron Brook). In contrast, *Seqocrypta jakara* is here reported from 33 suburbs of greater Brisbane. Some of those are now outer suburbs; however, many are not. Early housing development in Brisbane was far more piecemeal. Since the advent of 'better' clearing techniques, many hectares can now be quickly cleared of all vegetation, the trees are uprooted and bulldozed together in a heap that is burnt to ash along with all other vegetation in the area. In that process, ground dwelling invertebrates have little possibility of survival. In the past, clearing was probably more gradual and patchwork. After an allotment was cleared, it was probably soon recolonized from adjacent, less disturbed areas. In fact, this patchwork approach can be reasonably applied to more localised events such as bush restoration from heavy lantana overgrowth.

The second example of barychelids in urban environments occurs in the suburbs of Perth where *Synothele michaelsoni* is found in a number of localities. The reason is probably similar to that for *Seqocrypta jakara*.

#### TAXONOMY BARYCHELIDAE

Barycheleae Simon, 1889b, p. 192; Raven, 1985b, p. 111

#### DIAGNOSIS

Mygalomorphs with two claws on all legs, third claw always absent; well developed claw tufts on legs; maximally four spinnerets; apical segment of posterior lateral spinnerets short, domed; scopula present on metatarsi and tarsi I, II; anterior lobe of maxillae small; rastellum present or absent; clavate trichobothria confined to basal tarsi, filiform trichobothria on tibiae, metatarsi

	<i>Aureocorypta</i>	<i>Idioclis</i>	<i>Idiomma</i> *	<i>Mandelia</i>	<i>Moniga</i>	<i>Ozicoryta</i>	<i>Sason</i>	<i>Sequecipia</i>	<i>Synothela</i>	<i>Tritume</i>	<i>Tungari</i>	<i>Zephyranthe</i>
PMS size	large	large	large	reduced/abs.	large	reduced/abs.	large	large	reduced/abs.	large/none	absent	absent
Rastellum	absent	weak	weak	weak-absent	weak	absent-strong	weak	absent	absent-strong	absent-strong	weak	strong
Basal cheliceral teeth	basal	basal	half	basal	basal half	basal	basal	basal	basal	basal	basal	basal
Preening Combs	pres/absent	pres/-absent	pres/absent	pres/absent	pres/absent	pres/absent	pres/absent	pres/absent	pres/absent	pres/absent	pres/absent	pres/absent
Eye group shape	long	rectangular, wide	long	long	wide trapezoidal	long trapezoidal	wide	trapezoidal	long	long	long	long
Maxillary lyra	weak-absent	absent	strong	absent	absent	absent	absent	absent	absent	absent	absent	absent
Maxillary cuspules, no.	1-10	1-20	1-30	12-100+	8-70	4-35	1-20	5-20	5-31	50-300+	12-40	100+
density	spaced	spaced	spaced	spaced	spaced	spaced	spaced	spaced	spaced	tight	spaced	tight
shape	pointed dome	long cone	pointed dome	dome	pointed dome	dome	pointed dome	pointed dome	dome	dome	dome	dome
size	normal	small	large	small-normal	normal	normal	small	large	large	small	normal	small
♂ Tibial spur, 1	1	distinct	strong	distinct	weak	distinct	weak	absent	distinct	distinct	small	distinct
palpal bulb	1	pyriform	keeled	keeled-pyriform	pyriform	pyriform	pyriform	pyriform	keeled	keeled-pyriform	keeled	keeled
keels, palpal bulb	1	pres/-absent	strong	pres/absent	pres/absent	pres/absent	absent	absent	all species	pres/absent	strong	strong
tooth rows: leg I (IV)	1	2 (1)	0-2 rows	2 (2)-2 (1)	2 (1)-1 (0)	2 (2)-1 (1)	0/1	1 (1)-1 (0)	2 (2)-0 (0)	all = 0	2 (= > 2)	1 (1)
interchel. tum.	1	absent	absent	absent/pres	absent	absent	absent	absent	pres/absent	pres/absent	absent	absent
♀ labial cuspules	none	none	none	none	none	none	c 10	none	none	none	none	9-40
fovea	absent	procurved	procurved	procurved	procurved	procurved	procurved	procurved	procurved	procurved	procurved	procurved
teeth on leg I claws	absent	present	present	present	present	present	absent	present	present	present	present	pres/absent
claws on leg I cf IV	smaller	equal	half	equal	equal	equal	equal	equal	half [equal]	equal	equal	> equal
palpal claw cf tuft	much smaller	equal	much smaller	equal	much smaller	equal	tuft weak	equal	much smaller	much smaller	equal	much smaller
scopula, legs I, II	weak	weak	very dense	dense	dense/weak	dense >	weak	dense	dense	dense	dense	dense
basifemoral thorns	pres/absent	absent	pres/absent	pres/absent	absent	pres/absent	absent	pres/absent	pres/absent	pres/absent	present	pres/absent
spermathecae	1 + 1	1 + 1	1 + 1	1 + 1/2 + 2	1 + 1	1 + 1	1 + 1	♂ spur	1 + 1/2 + 2	1 + 1/2 + 2	1 + 1	1 + 1
Autapomorphy		sternum	scopula	sternum & 9 patridia			labial cuspules		♀ leg I claws	dense cuspules	femur lyra	labial cuspules
Habitat	woodland	littoral	xeric	diverse	woodland	diverse	arboreal	open forest	woodland	diverse	open woodland	open woodland
Distribution	W.A.	NE, Q.	Aust.	Q & W.A.	N. Aust.	Australia	NEQ	SEQ	WA	Qld	NEQ	Cape York

Table 1. Australian Barychelinae and Sasoninae (*Sason*). \*provisional data; =>, implied; [ ] rare state. Abbreviations: interchel. tum., intercheliceral tumescence.



and tarsi; all eyes on tubercle; fovea transverse; caput gently arched. Leg I of males plesiomorphically with distal ventral spur and upper megaspine and spur.

#### REMARKS

Subfamily groups will be considered elsewhere as they include genera from other parts of the world. No change in the constitution of subfamilies is made here from Raven (1985b). All taxa treated here, except for *Sason* (Sasoninae), are presently placed in the Barychelinae. However, Trichopelmatinae are not included in Barychelidae but in Theraphosidae. That change will be dealt with along with a revised phylogeny of the group.

### KEY TO BARYCHELID GENERA OF THE WESTERN PACIFIC

#### FEMALES

Almost all genera herein are based heavily on characters found only in females. Males of a genus are often not monothetic; hence, the key to males is very long. However, because of this specificity, it is effective specifically on species known herein. New species of some genera may not correctly key out. In general, species which may be problematical here are 'trapped' in generic keys, e.g. the *Ozicrypta* key includes species from genera with which they may be confused.

1. Paired claws biserially dentate *Monodontulum*  
Paired claws with few teeth in one row or bare . . . . . 2
- 2(1). Palpal claw tufts absent (Fig. 15A) . . . . . 3  
Palpal claw tufts present (Fig. 15C) . . . . . 5
- 3(2). Cuspules in line on leading edge of labium (Fig. 239B); eye group wider than long *Sason*  
Cuspules central on labium, if present . . . . . 4
- 4(3). Anterior face of maxillae with distinct groove; eye group squadrated (Fig. 238F) or longer than front width . . . . . *Rhianodes*  
Anterior face of maxillae without groove; eye group widely rectangular . . . . . *Sipalolasma*
- 5(2). Up to 30 cuspules on average of maxillae . . . 6  
Over 30 cuspules on average on maxillae . . . 20
- 6(5). Claws on leg I about half height of claw tufts and of claws on IV (Fig. 16F) . . . . . 7  
Claws on leg I of similar size to tufts and of claws on IV (Fig. 16C) . . . . . 9
- 7(6). Scopula on tarsi I, II very dense, wide, entire (Fig. 16C) and maxillary lyra strong (Fig. 23D, E) . . . . . *Idionmata*  
Scopula on tarsi I, II weak, narrow, entire or divided (e.g., Fig. 14A) and maxillary lyra weak (Fig. 23A-C) or absent . . . . . 8
- 8(7). Posterior median spinnerets well developed (Fig. 27C) . . . . . *Aureococrypta*  
Posterior median spinnerets small to absent . . . . . *Synothele*, part
- 9(6). Rastellum on raised conical process (Fig. 174B) . . . . . 10  
Rastellum absent or on low mound . . . . . 11
- 10(9). Medial row of teeth on chelicerae extends for full length of furrow . . . . . *Barycheloides*  
Medial row of teeth on chelicerae extends for only half length of furrow . . . . . *Barychelus*
- 11(9). Prolateral face of femur I with lyrate grooves (Fig. 162) . . . . . *Tungari*  
Prolateral face of femur I smooth, normal . . . 12
- 12(11). Posterior sternal sigilla large, separated from margin (Fig. 63C) . . . . . *Moruga*, part  
Posterior sternal sigilla small, marginal . . . 13
- 13(12). Fovea straight . . . . . *Encycrypta*  
Fovea clearly procurved, if short . . . . . 14
- 14(13). Abdomen pallid with no pattern dorsally or ventrally AND sternum c. 1.5 times longer than wider and line of spines across distal edge of rastellum . . . . . *Idioctis*  
Abdomen, sternum and rastellum not so . . . 15
- 15(14). Posterior median spinnerets absent . . . . . use *Ozicrypta* key  
Posterior median spinnerets present . . . . . 16
- 16(15). Palpal claw very small and deeply enclosed by tufts . . . . . 17  
Palpal claw only slightly smaller than tufts . . . 19
- 17(16). Preening combs on both proventral and retroventral faces of metatarsi III, IV . . . 18  
Preening combs not on both lower faces of metatarsi III, IV . . . . . 19
- 18(17). Basifemoral thorn setae absent AND spermathecae are 1 + 1 form . . . *Moruga doddi*  
Basifemoral thorn setae present OR spermathecae are 2 + 2 form . . . . . *Nihoa*, part
- 19(17). Spermathecae multilocular (Fig. 118G) . . . . . *Seqocrypta*, part  
Spermathecae otherwise . . . use *Ozicrypta* key
- 20(5). Cuspules present on labium . . . . . *Zophorame*  
Cuspules absent on labium . . . . . 21
- 21(20). Abdomen dorsally with mottling or paired pallid areas; maxillary heel rounded, normal 22  
Abdomen dorsally black or brown without pattern or mottling; maxillary heel distinctly squared . . . . . *Trittame*
- 22(21). Posterior median spinnerets large, c. 0.3 or more of the PLS basal segment in diameter (Fig. 198G) . . . . . 23  
Posterior median spinnerets reduced or absent . . . . . *Mandjelia*, part
- 23(22). Rastellum weak or absent (New Caledonia) . . . . . 24  
Rastellum distinct (Fig. 198C) . . . . . 25

	BARYCHELINAE										SASONINAE	
	<i>Barycheloides</i>	<i>Barychelus</i>	<i>Encyrcrypta</i>	<i>Fijicrypta</i>	<i>Nithea</i>	<i>Naigeogia</i>	<i>Oratom</i>	<i>Questocrypta</i>	<i>Rhinodes</i>	<i>Monodontium</i> <sup>1</sup>		
PMS size	large	absent-large	large	large	v large-absent	large	large	large	large	reduced-absent		
Eye group shape	wide trapezoidal	wide trapezoidal	wide trapezoidal	subquadrate	subquadrate-long	long	subquadrate	wide trapezoidal	subquadrate	wide		
Rastellum	strong process	low process	absent	weak	weak/absent	strong mound	weak/absent	absent	absent	absent		
Basal chelical teeth	full	full	basal	basal	basal	basal	basal?	basal	basal	basal		
Maxillary cuspules, no	3-30	3-7	1-30	3-6	2-23	120+	60-200	c. 100+?	10-20	9-20, absent in ♂		
spacing	spaced	spaced	spaced	spaced	spaced	spaced	tight	tight	spaced	spaced		
microgrooves	fine	fine	fine	fine	fine	coarse	coarse	coarse	fine	?fine		
shape	pointed dome	pointed dome	dome	long pointed	tapered cone	dome	dome	dome	dome	?		
size	normal	normal-large	normal	normal	small	normal	normal	normal	normal	?		
Maxillary lyra	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent		
Labial cuspules	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent		
Preening combs	pres./absent	pres./absent	pres./absent	absent	pres./absent	present	weak-absent	pres./absent	absent	absent		
♂ Tibial spur	weak	unknown	distinct	weak	small-distinct	unknown	unknown	unknown	strong distal	strong		
palpal bulb	keeled	unknown	keeled->	simple	simple	unknown	keeled	unknown	wide embolus	keeled		
tooth rows: legs I/IV	2(1)-1(0)	?	2(1), 1(1), 2(0)	2(1)	2(2)-1(0)	?	=>2(2)	?	2(1)	2(0)		
interchel. tum.	absent	absent	absent	absent	absent(pres.)	?	absent	absent	absent	absent		
♀ Palpal claw of tuft	much smaller	much smaller	small-equal	n/a	half size	equal	small	equal	n/a	n/a		
palpal claw tuft	present	present	present	absent	present	present	present	present	absent	absent		
leg I claw vs IV	equal	equal	equal	much smaller	equal	equal	equal	equal	equal	equal		
fovea	procured	procured	straight	procured	procured	procured	procured	str. procured	procured	slight procured		
spermathecae	1+1	1+1	1+1, 2+2	1+1	1+1, 2+2	1+1	1+1	1+1	1+1	1+1		
basifemoral thorns	pres./absent	pres./absent	pres./absent	absent	pres./absent	absent	absent	absent	absent	absent		
Autapomorphy	basal	♀ fovea		spur & bulb		cusculent	pattern		maxillary groove	♀ claws biserial		
Distribution	NC: south	NC: central	NC: island	Fiji	Pacific Is	central	NC: north	NC: central	Indo-malaysia	PNG		

Table 2. Barychelid genera of Western Pacific excluding Australia, see also Table 1 for *Mandjelia*, *Sason*, & *Idiopsis*. \*provisional data; <sup>1</sup> from Raven, in prep. n/a, not applicable. NC, New Caledonia. Abbreviations: interch. tum., interchelical tumescence.

- 24(23). Fovea distinctly procurved . . . . . *Orstom*  
Fovea straight (Fig. 208A) . . . . . *Questocrypta*
- 25(23). Cuspules extend back to heel; sternal sigilla  
small, marginal (New Caledonia) (Fig. 199C) . . . . . *Natgeogia*  
Cuspules confined to anterior inner corner; ster-  
nal sigilla distinct, submarginal (Fig. 67F)  
(Australia) . . . . . *Moruga*, part
- MALES**
1. Large clavate trichobothria distal  
on tarsi . . . . . *Sason*  
Clavate trichobothria basal on tarsi or absent 2
- 2(1). Average no. of cuspules on maxillae > 30 . . . 3  
Average no. of cuspules on maxillae < 30 . . . 10
- 3(2). All claws bare . . . . . *Tritame*  
At least some claws with teeth . . . . . 4
- 4(3). Posterior median spinnerets absent . . . . . 5  
Posterior median spinnerets present, if small 7
- 5(4). Palpal bulb with small keels or keels absent .  
. . . . . *Mandjelia*, part  
Palpal bulb with large distinct keels (e.g. Fig.  
169J). . . . . 6
- 6(5). Rastellum strong (Fig. 168D,E) . . . *Zophorame*  
Rastellum weak or absent . . . *Mandjelia*, part
- 7(4). Posterior median spinnerets large and  
well developed . . . . . 8  
Posterior median spinnerets small,  
reduced . . . . . *Mandjelia*, part
- 8(7). Rastellum absent . . . . . *Questocrypta*  
Rastellum present . . . . . 9
- 9(8). Rastellum a distinct raised spinose process;  
maxillary cuspules extent back onto heel  
(Fig. 199C) . . . . . *Natgeogia*<sup>1</sup>  
Rastellum a low spinose region (Fig. 63A);  
maxillary cuspules only on anterior inner  
corner (Fig. 63C) . . . . . *Moruga*, part
- 10(2). Stridulatory lyra on anterior maxillae face 11  
Stridulatory lyra absent . . . . . 12
- 11(10). Large spiders with densely scopulate legs  
. . . . . *Idiommatu*  
Small spiders with weakly scopulate legs . . . 1  
. . . . . *Aureocrypta*, part
- 12(10). Claws on leg I much smaller than IV . . .  
. . . . . *Synothele*, part  
Claws on leg I same size as IV . . . . . 13
- 13(12). Intercheliceral tumescence present  
. . . . . *Synothele*, part  
Intercheliceral tumescence absent . . . . . 14
- 14(13). Palpal bulb with large distinct keels  
(e.g. Fig. 169J) . . . . . 15  
Palpal bulb with small keels or keels absent 26
- 15(14). Posterior median spinnerets weak or  
absent . . . . . 16  
Posterior median spinnerets distinct . . . . . 23
- 16(15). Upper megaspine and microspur  
on tibia I absent . . . . . 17  
At least upper megaspine present on tibia I 18
- 17(16). Several spines on tibial spur (Fig. 161D);  
sternum long, narrow (Fig. 161E) . . . *Tungari*  
One spine on tibial spur; sternum cordate  
. . . . . *Nihoia*, part
- 18(16). All claws bare . . . . . *Synothele subquadrata*  
Claws on leg I or IV dentate . . . . . 19
- 19(18). One row of teeth on claws  
of legs I and IV . . . . . *Ozicrypta*, part  
Two rows of teeth on claws of legs I . . . . . 20
- 20(19). Distinct rastellum present (Fig. 133G)  
. . . . . *Synothele*, part  
Rastellum absent . . . . . 21
- 21(20). Microspur absent AND upper megaspine  
on tibia I long . . . . . *Ozicrypta*, part  
Microspur present AND upper megaspine on  
tibia I short . . . . . 22
- 22(21). Posterior median spinnerets absent . . .  
. . . . . *Synothele boongaree*  
Posterior median spinnerets small  
but distinct . . . . . *Ozicrypta microcauda*
- 23(15). Rastellum a strong, raised,  
spinose process (Fig. 1721) . . . *Barycheloides*  
Rastellum weak or sessile . . . . . 24
- 24(23). Anterior face of maxillae with distinct groove  
. . . . . *Rhianodes*  
No groove on anterior face of maxillae . . . 25
- 25(24). Posterior median spinnerets small, mid-  
diameter < 0.20 of that of basal segment of  
posterior lateral spinnerets . . . *Ozicrypta*, part  
Posterior median spinnerets well developed,  
mid-diameter > c.0.30 of that of basal segment  
of posterior lateral spinnerets . . . *Nihoia*, part
- 26(14). Tibial spur a low, weak mound, if evident  
(Fig. 210A) . . . . . 27  
Tibial spur a distinctly raised mound . . . 9
- 27(26). Palpal bulb with long slender  
embolus (Fig. 64E) . . . . . 28  
Palpal bulb without slender embolus (Fig.  
210C) . . . . . *Fijocrypta*
- 28(27). Eye group widely trapezoidal  
(Fig. 65C) . . . . . *Moruga*, part  
Eye group only slightly wider behind than in  
front (Fig. 112A) . . . . . *Sequoecrypta*
- 29(26). Sternum narrow, about 1.5 times longer than  
wide; abdomen pallid without pattern *Idioctis*  
Sternum cordate, up to c.1.2 times longer than  
wide; abdomen dark with pattern . . . . . 30
- 30(29). Posterior median spinnerets small,  
mid-diameter < 0.20 of that of basal segment  
of posterior lateral spinnerets . . . *Ozicrypta*, part  
Posterior median spinnerets well developed,  
mid-diameter > c.0.30 of that of basal segment  
of posterior lateral spinnerets . . . . . 31

- 31(30). Legs with darker banding . . . . . 32  
 Legs entirely of one colour . . . . . 33
- 32(31). One row of teeth on claws  
 of legs I and IV . . . . . *Encyocrypta*, part  
 Two rows of teeth on claws of legs I and one  
 row on IV . . . . . *Nihoa*, part
- 33(31). Upper megaspine and microspur  
 on tibia I absent . . . . . 34  
 At least upper megaspine present on tibia I . . . . . 35
- 34(33). Fovea straight . . . . . *Encyocrypta*, part  
 Fovea procurved . . . . . *Moruga*, part
- 35(33). One row of teeth on claws of leg I or IV . . . . .  
 . . . . . *Encyocrypta*, part  
 Two rows of teeth on claws of leg I . . . . . 36
- 36(35). Spur on tibia I subdistal (Fig. 188D) . . . . .  
 . . . . . *Encyocrypta*, part  
 Spur on tibia I distal (Fig. 217D) . . . . . *Nihoa*, part

<sup>1</sup> inferred from ♀

## AUSTRALIAN BARYCHELIDAE

### BARYCHELINAE Simon, 1889

Barycheleae Simon, 1889b, p. 192.

Raven, 1985b, p. 111.

### *Aureocrypta* gen. nov.

#### DIAGNOSIS

Differs from *Synothele* in the very orthogonal corners of the maxillae with only a small difference between front and back width and hence poor (if any) heel, and the glabrous ridge medially on the labium. Unlike *Synothele*, *Aureocrypta* species plesiomorphically have well developed posterior median spinnerets and no abdominal pattern. *Aureocrypta* differs from *Ozicrypta* in having a reduced pair of claws on leg I in ♀♀ and from *Idiommata* in the weak scopulae on tarsi I, II.

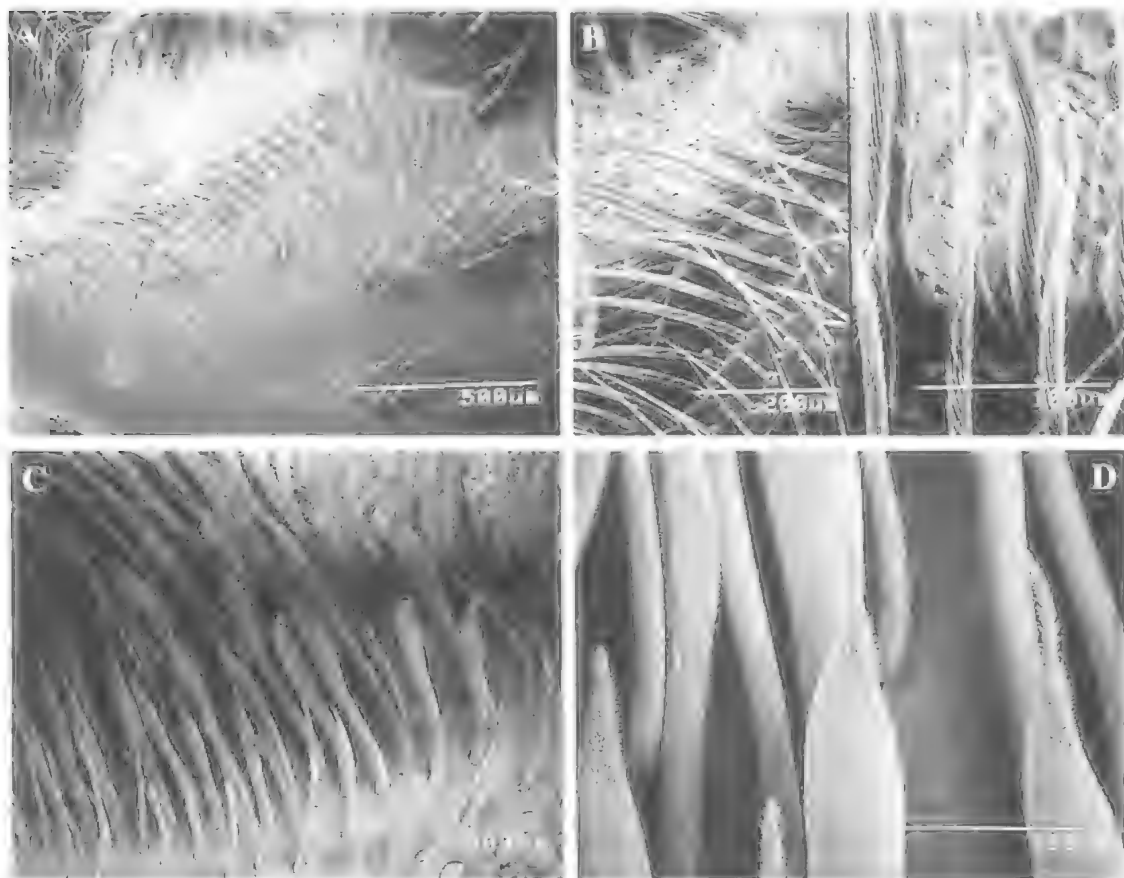


FIG. 23. Scanning Electron Micrographs. Front face of maxilla, ♀♀. A-C, *Aureocrypta lugubris*, 'lyra' setae (C); D, E, *Idiommata* sp., lyra setae.

## DESCRIPTION

**FEMALES.** Carapace ovate, uniformly hirsute, sometimes with brown markings on lateral carapace and caput; enlarged setae beside posterior striae and anteromedially; paired foveal bristles present. Caput lightly arched; striae, all save anterior pair narrow, distinct; lateral margins lightly setose. Fovea short, shallow, transverse, slightly procurved. Eye group subquadrate to longer than wide; back width slightly greater than front; tubercle distinct but not steeply defined posteriorly; eyes in 3 rows. Clypeus absent. Chelicerae short, stout; rastellum and rastellar mound absent. Cheliceral furrow with many teeth on promargin; basomesally a cluster of small teeth and granules. No modifications on cheliceral interfaces of ♀♀. Maxillae slightly longer than wide, lightly setose; cuticle microsculpture smooth; heel not produced; anterior lobe short, defined by short groove; few (2-5) long pointed cusps clustered on inner angle of maxillae, cusps not on raised dome; distinct lyra on prolateral lower face of maxillae (*A. lugubris*) or lyra absent. Cuspule microstructure: c. 40-50 µm in maximum diameter; intercrest distance, c. 0.8 µm apart; profile, long pointed cones; ridge direction, convergent fine microridges; cuspule interspace, 2 or more diameters. Labium wider than long, no cusps, suture broad, low; medial ridge very broad, occupying at least 2/3 of labium surface, distinct, glabrous, flat. Sternum wide, cordate; all sigilla small, marginal, oval. Legs moderately stout, setose but not hirsute save for adpressed grey hairs. Thorn spines absent. Preening combs weak, on metatarsi III, IV. Basifemoral thorns in ♀♀ (*A. lugubris*) or absent. Paired claws of leg I of ♀♀ very small, half size of tuft or smaller. Two rows of trichobothria on tibiae, one very short strongly curving row on metatarsi, two rows on tarsi including few clavates basally. Claws tufts small, narrow in cross-section, continuous with scopula, triangular in axial or dorsal view. Scopula for full length or distal 3/4, entire on metatarsi I, II, entire, full but weak on tarsi I, II and extends for lower 160° of articles; distal, weak on metatarsi III, IV; divided on tarsi III, IV. Legs lightly spinose. Abdomen lightly hirsute, without pattern. PMS well developed; PLS comparatively small, short, apical segment domed. Spermathecae two, each a coniform or broad mound with or without lateral lobe (*A. katersi*).

## ETYMOLOGY

From the first two letters of each word of the Australian Research Council, Aureco, the granting body that provided small part of the support needed for this monograph, and the Latin *crypta*, underground passage, alluding to the burrowing habit of these spiders.

## TYPE SPECIES

*Aureocrypta lugubris* sp. nov.

## INCLUDED SPECIES

*Aureocrypta lugubris* sp. nov.

*Aureocrypta katersi* sp. nov.

## DISTRIBUTION

One area just north of Perth and also in the northwestern corner of WA.

*Aureocrypta lugubris* sp. nov.

(Figs 4A, 24, 25, Table 1)

## MATERIAL EXAMINED

TYPE. Holotype ♀, Chittering to Pearce Air Force Base, c. 31°30'S 116°00'E, WA, G. H. Lowe, WAM 89/377.

## DIAGNOSIS

Differs from all known species of *Synothele* in Western Australia by having well developed posterior median spinnerets and lacking abdominal pattern. It differs from *A. katersi* in having a maxillary lyra.

PMS large, well developed. Rastellum absent. Eye group long, clearly wider behind than in front. **FEMALES.** Teeth absent on all paired claws; paired claws on I about half size on those on IV. Basifemoral thorns and preening combs

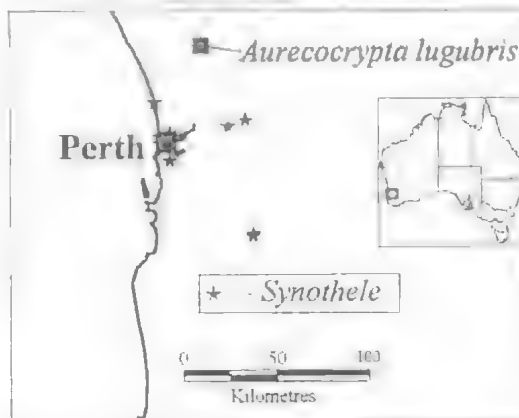


FIG. 24. Record of *Aureocrypta lugubris* in south western Australia



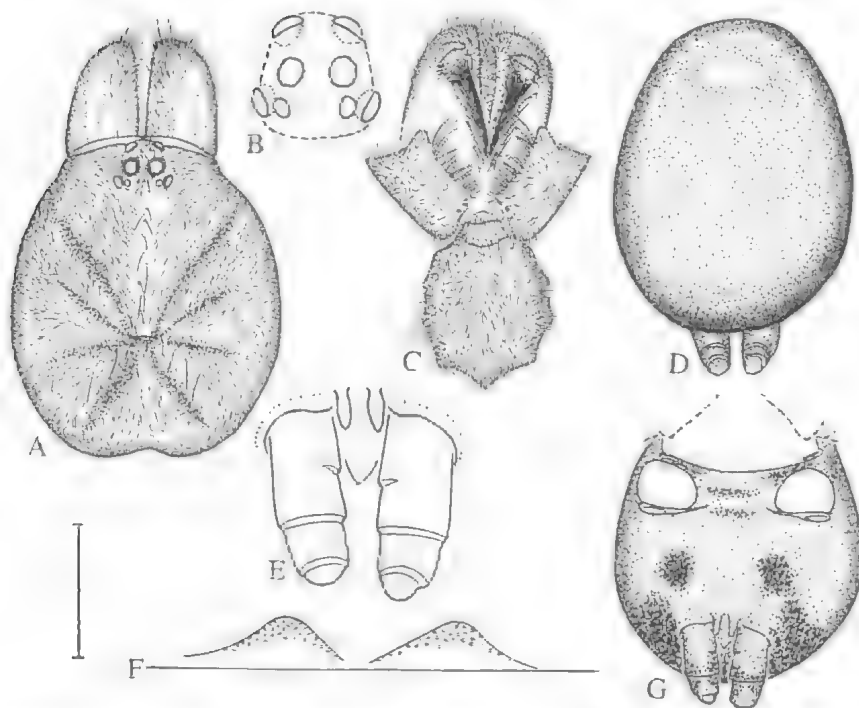


FIG. 25. *Aureocrypta lugubris* sp. nov., holotype ♀ (WAM 89/377). A, carapace & chelicerae, dorsal view; B, eye-group, dorsal view; C, sternum, maxillae, labium & chelicerae, ventral view; D, G, abdomen, dorsal (D), ventral view (G); E, spinnerets, ventral view; F, spermathecae. Scale line = 2mm (A, C, D, G); 1mm (B, E); 0.35 (E).

present. Scopula in distal half of metatarsi III. Spermathecae two, each a low antennate dome. MALES. Unknown.

#### ETYMOLOGY

From Latin 'lugubris', black, and refers to the abdomen.

#### DESCRIPTION

##### HOLOTYPE FEMALE WAM 89/377

Carapace 4.88 long, 4.06 wide. Abdomen 4.56 long, 3.88 wide. Total length, 11.

**Colour.** Carapace yellow brown with brown speckling on caput, along lateral margins, and on interstrial ridges, chelicerae yellow brown, and legs yellow brown, not annulated. Abdomen dorsally entirely brown with slightly paler semicircle above heart anteriorly; ventrally brown with pair of darker areas anterior lateral of spinnerets.

**Carapace.** Pilosity: light cover of straight brown hairs on caput and interstrial ridges; striae indistinct, glabrous, narrow. Bristles: 3-4 erect weak beside posterior striae; c.7 erect thick brown anteromedially and few shorter in band beside caput; 4 long thick and 6-10 finer between

PME, and 1 long thick and 8-10 finer between ALE; lateral margins glabrous. Fovea short, straight.

**Eyes.** Tubercle lateral margins indistinct, AME on slope. Group occupies 0.28 of head-width; front width, back width, length, 28, 38, 34, respectively. Back row procurved. AME with greenish tint. MOQ front width, back width, length, 26, 26, 19, respectively. AME:ALE: PME:PLE, 11:10:6:10. Eye interspaces: AME-AME, 0.7; AME-ALE, 0.9; ALE-PLE, 1.5; PME-PME, 1.4; PME-PLE, 0.2; ALE-ALE, 0.7.

**Chelicerae.** 10-15 thick and many finer bristles prodorsally, laterally a uniform cover of fine setae. Rastellum and mound absent, sparse bristles on inner distal corner slightly thicker. Furrow promargin with 1 small distal and 7 large spaced teeth, basomesally with 3 small teeth and c.10 granules.

**Labium.** 0.43 long, 0.88 wide. Labiosternal suture two separated sigilla.

**Maxillae.** 1.38 long in front, 2.00 long behind, 0.88 wide; with 2-3 cuspules in inner angle. Heel broad; anterior lobe broad, distinct. Anterior face of maxillae with lyra of 12-15 spatulate setae in

diagonal line near ventral surface; lyra interfaces with disordered line of pin setae on outer face of chelicerae in horizontal band just above base.

**Sternum.** 2.13 long, 2.08 wide. Sigilla all oval, small, marginal, on strongly sloping edge.

**Legs.** 3-6 basifemoral thorns on I, II, IV, and palp. Thorn spines absent. Preening combs: 1 of 2 weakly paired setae on proventral and retroventral III, IV.

	I	II	III	IV	Palp
Femur	3.20	2.88	2.56	3.48	2.40
Patella	2.04	2.00	1.68	1.84	1.68
Tibia	2.08	1.92	1.72	2.60	1.48
Metatarsus	1.52	1.48	1.80	3.00	-
Tarsus	1.20	1.20	1.24	1.44	1.44
Total	10.04	9.48	9.00	12.36	7.00

**Scopula.** Metatarsi: I, II, distal 3/4 (I)-2/3 (II), dense, entire; III, in distal 1/2 mixed with setae; IV, two narrow triangles in distal 1/3. Tarsi: I, II, full, dense, entire; III, dense, entire, save for single band of setae; IV, divided by setal band 3-5 wide.

**Spines.** I: fe p1, d2w, pa 0, ti 0, me v1 basal. II: fe p1, d2w, pa 0, ti 0, me v1 basal. III: fe p1, d2w, r1, pa p1, ti p2, r2, v5, me p2, r2, v5. IV: fe d4w, r1, pa 0, ti p1, r2, v9w, me p2, r1, v5. Palp: fe p1, d4w, pa 0, ti v5.

**Claws.** All bare; on leg I and palp less than half height of tufts, leg IV claws longer but only two-thirds height of tufts.

**Trichobothria.** Two rows, each of c.8 for length of tibiae; c.8 on metatarsi in strongly curving row, basally trichobothria horizontal; c.3 thin clavate and c.16 filiform on tarsi.

**Spermathecae.** Two, each a low antennate dome.

**Spinnerets.** PMS well developed, 0.28 long, 0.10 wide, 0.08 apart, and c. 0.19 of basal PLS in

diameter. Basal, middle, apical, total segments of PLS, 0.83, 0.25, 0.15, 1.23 long, respectively.

#### DISTRIBUTION & HABITAT

Between Chittering and Pearce Air Force base, just north of Perth, WA.

#### *Aureocrypta katersi* sp. nov.

(Figs 26, 27, Table 1)

#### MATERIAL EXAMINED

TYPE. Holotype ♀. Katers Is, 14°28'S 125°32'E, WA, in leaf litter, 20 July 1988, A. F. Longbottom, WAM 89/340

#### ETYMOLOGY

From Katers Island.

#### DIAGNOSIS

♀ ♀ differ from those of *A. lugubris* in lacking a maxillary lyra and basifemoral thorns and being smaller.

PMS large, well developed. Rastellum absent. Eye group short, slightly wider behind than in front. FEMALES. Teeth absent on all paired claws; claws on I about half size of those on leg IV. Basifemoral thorns, preening combs and thorn spines absent. Scopula in distal 1/4 of metatarsi III. Spermathecae a pair of broad low mounds. MALES. Unknown.

#### DESCRIPTION

##### HOLOTYPE FEMALE WAM 89/340

Carapace 4.04 long, 3.28 wide. Abdomen 3.60 long, 2.56 wide. Total length, 8.

**Colour.** Carapace dirty yellow brown with darker areas on caput, along margins and in lines on interstitial ridges, chelicerae yellow brown, and legs yellow brown with slightly darker areas laterally on femora, patellae, and tibiae, not annulated. Abdomen (slightly shrivelled) dorsally dark brown; ventrally pallid with dark brown areas around margins.

**Carapace.** Light cover of long grey hairs on caput and interstitial margins; striae distinct, narrow, glabrous, deep. Bristles: none enlarged on thoracic region; 6-8 thicker anteromedially; 8-10 fine between PME, and 6-8 long between ALE; few fine long hairs on lateral margins. Fovea short, deep, slightly procurved.

**Eyes.** Tubercle distinct. Group occupies 0.31 of head-width; front width, back width, length, 24, 33, 24, respectively. Back row straight. MOQ front width, back width, length, 19, 19, 15, respectively, AME:ALE:PME:PLE, 7:10:5:9. Eye interspaces: AME-AME, 0.9; AME-ALE,

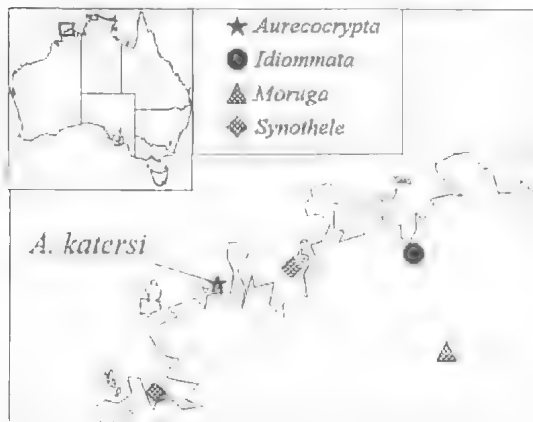


FIG. 26. *Aureocrypta katersi* in NW Australia.

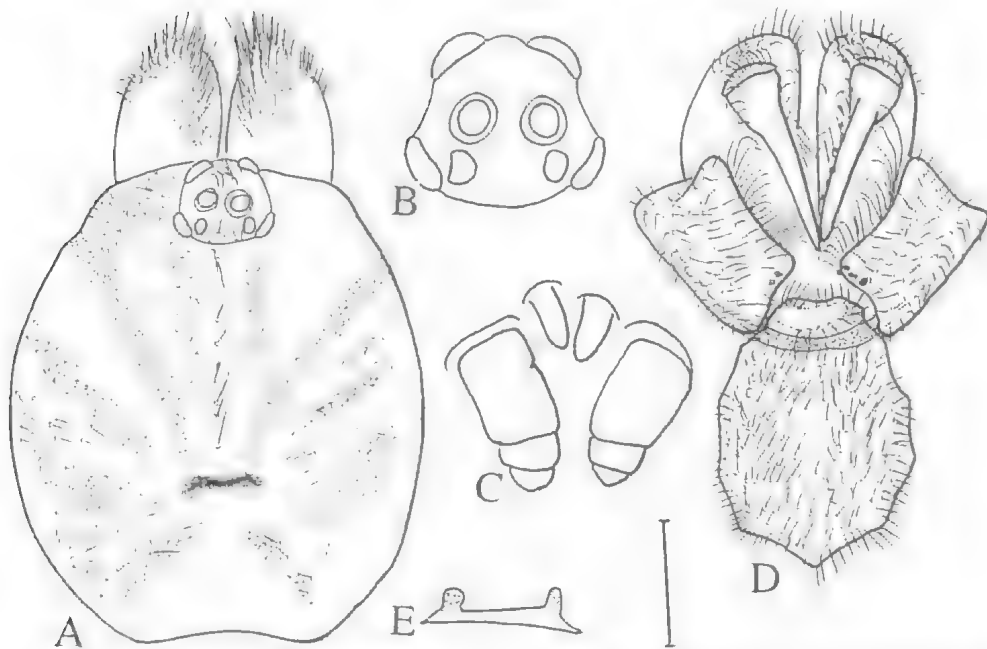


FIG. 27. *Auraccocrypta katersi* sp. nov., holotype ♀ (WAM 89/340). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; D, sternum, maxillae, labium & chelicerae, ventral view; C, spinnerets, ventral view; E, spermathecae. Scale line = 1mm (A, D); 0.25mm (E); 0.5mm (B, C).

0.7; ALE-PLE, 1.1; PME-PME, 1.4; PME-PLE, 0.1; ALE-ALE, 1.0.

**Chelicerae.** Wide band of few long and many short bristles prodorsally, laterally few fine setae. Rastellum absent. Furrow promargin short with 1 small distal and 7 larger spaced teeth, basomesally with 6 small teeth.

**Labium.** 0.33 long, 0.75 wide. Labiosternal suture two widely separated sigilla.

**Maxillae.** 1.05 long in front, 1.50 long behind, 0.65 wide; with 2-5 cuspules in inner angle. Heel broad; anterior lobe indistinct.

**Sternum.** 2.08 long, 1.68 wide. Sigilla all very small, oval, marginal.

**Legs.** I, II clearly thicker than III, IV. Basifemoral thorns, thorn spines, and preening combs absent. Tarsi of III, IV distally incrassate.

	I	II	III	IV	Palp
Femur	2.36	2.12	1.88	2.84	1.88
Patella	1.76	1.56	1.28	1.56	1.24
Tibia	1.76	1.48	1.32	2.48	1.12
Metatarsus	1.28	1.28	1.36	2.60	-
Tarsus	0.88	0.84	0.84	1.16	1.16
Total	8.04	7.28	6.68	10.64	5.40

**Scopula.** Metatarsi: I, full, hairs long, entire; II, in distal half, divided; III, in distal quarter, mixed with setae; IV, thin, in distal sixth, divided by setal band 2-4 wide. Tarsi: I, II, full, medium density, entire; III, hairs long, divided by setal band 1-2

wide; IV, thinner, divided by wide setal band 2-4 wide.

**Spines.** I: fe p1, d4w, pa 0, ti v3w, me v1 basal. II: fe p1, d4w, pa 0, ti v2w, me v1. III: fe p1, d4w, r1, pa p2, ti p2, r1, v7w, me p3, r2, v6. IV: fe d3w, r1, pa 0, ti r2, v7, me p2, r2, v8. Palp: fe p1, pa 0, ti v4.

**Claws.** On leg I and palp very small, about half height of tufts and bare; claws on leg IV bare, long, reach above tufts.

**Trichobothria.** Two rows, each of c.7 for length of tibiae; c.12 on metatarsi in curving row; c.15 filiform on tarsi.

**Spermathecae.** Two, each a broad low mound.

**Spinnerets.** PMS well developed; 0.20 long, 0.08 wide, 0.08 apart, and c.0.25 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 0.40, 0.13, 0.05, 0.58 long, respectively.

#### DISTRIBUTION & HABITAT

Leaf litter at Katers Island, NW WA.

#### Idioctis Koch

*Idioctis* Koch, 1874, p. 484 (type species by monotypy *Idioctis helva* L. Koch); Simon, 1892, p. 125; 1903, p. 914; Rainbow, 1911, p. 115; Roewer, 1942, p. 214; Bonnet, 1957, p. 2286; Brignoli, 1983, p. 129;

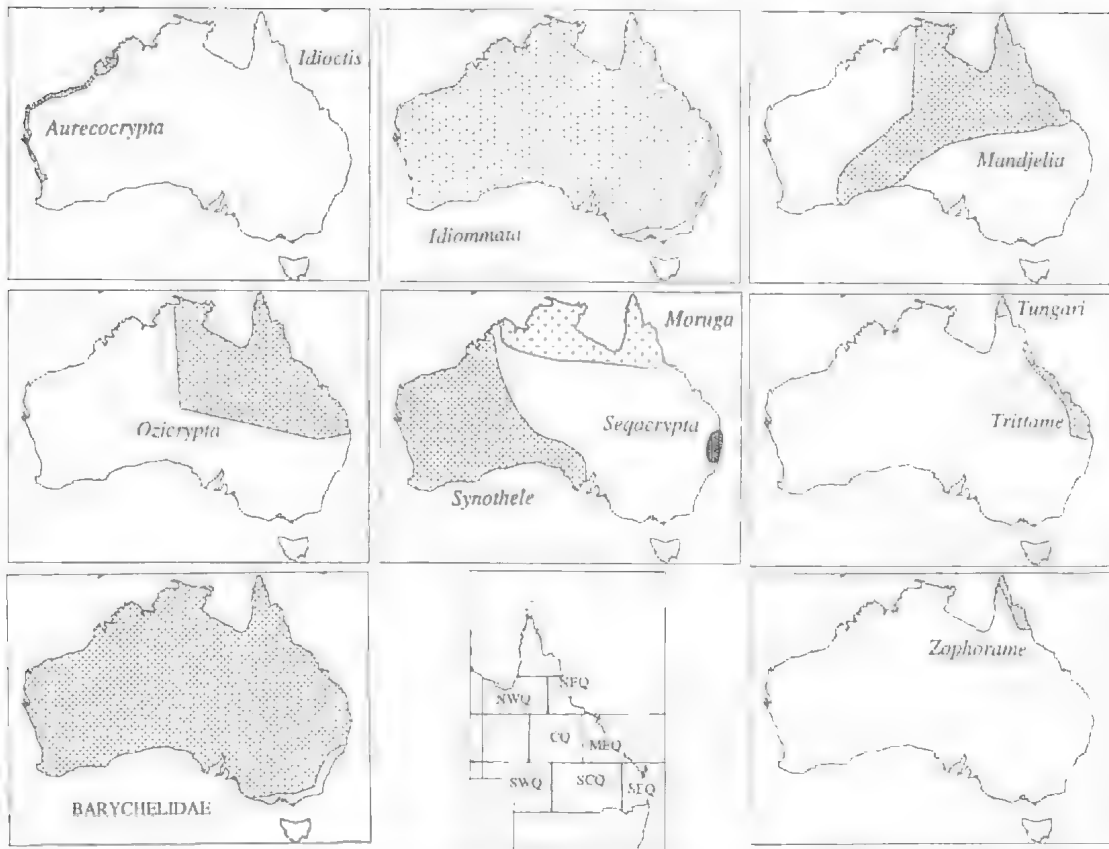


FIG. 28. Estimated distributions of barychelid genera in Australia with region names in Queensland.

Main, 1985, p. 12; Raven, 1985b, p. 113; Raven, 1988, p. 2; Platnick, 1989, p. 93; Churchill & Raven, 1992, p. 10; Platnick, 1993, p. 97.

*Atrophonysia* Benoit & Legendre, 1968, p. 330 (type species by original designation *Atrophonysia intertidalis* Benoit & Legendre). First synonymized by Raven, 1985b, p. 113. Brignoli, 1983, p. 130; Raven, 1985b, p. 113.

#### DIAGNOSIS

Differs from other Australian barychelids by the combination of long narrow sternum, pallid abdomen without pattern, and thicker legs I and II. It is most similar to some *Moruga* and *Ozicrypta* none of which make burrows in the intertidal zone (see Churchill & Raven, 1992).

Supplementary characters. Cuspule microstructure: c.20µm in maximum diameter; intercrest distance, 1µm apart; profile, long pointed cones c.2.5 times higher than wide; ridge direction, ridges parallel to long axis of cuspule for length; cuspule interspace, 2 or more diameters.

#### DISTRIBUTION

Near beaches and in littoral zones in Fiji (Koch, 1874), Singapore (Abraham, 1924), Western Samoa (Marples 1951, 1955), Madagascar (Benoit & Legendre, 1968), Seychelle Islands (Benoit, 1978), Christmas Island (Indian Ocean, Marshall and Caroline Islands (Raven, 1988), NE Australia, New Caledonia and the Solomon Islands (Churchill & Raven, 1992).

#### REMARKS

Main (1982) transferred *Idiommatia sordida* Rainbow, 1898 and *I. crassipes* Rainbow, 1898 to *Idioctis* (see Remarks *Idiommatia* for changes herein).

#### *Idioctis yerlata* Churchill & Raven

*Idioctis yerlata* Churchill & Raven, 1992, p. 14.

#### MATERIAL EXAMINED

See Churchill & Raven (1992).

## DIAGNOSIS

Spermathecae with one large medial lobe and variable basal lobe ectally; basal lobe small with common atrium with lateral lobe or separate lobe arising above base of medial lobe. Three closely spaced teeth on cheliceral promargin near fang base. Many (28-30) thorn spines on prolateral patellae III. 5-7 teeth on paired claws of leg I. Preening combs absent. Rastellum is 12-14 long curved spines.

## DISTRIBUTION &amp; HABITAT

Known only from mangroves and loose coral rubble in the intertidal zone from Port Douglas to north of Cape Tribulation, NEQ, Australia.

## REMARKS

An *Acacia* log (c. 1 m long, 30 cm diameter) with many holes hand-drilled into it was introduced (upright) to the main site in November, 1991. By March, 1992, 7 spiders had colonised the log. Males were sought in April, July, August, and November; only females were found.

*Idiommata* Ausserer

*Idiommata* Ausserer, 1871, p. 183. Type-species by monotypy, *Idiops blackwalli* O. P., Cambridge, 1870. Thorell, 1881, p. 243; Simon, 1892, p. 117; Rainbow, 1911, p. 114; Roewer, 1942, p. 214; Bonnet, 1957, p. 2286; Brignoli, 1983, p. 129; Main, 1985, p. 13; Raven, 1985b, p. 114; Platnick, 1989, p. 93.

*Lampropodus* Rainbow & Pulleine, 1918, p. 135; Roewer, 1942, p. 218; Bonnet, 1957, p. 2343; Brignoli, 1983, p. 129; Main, 1985, p. 13. Type-species by subsequent designation of Petrunkevitch (1928), *Lampropodus scintillans* Rainbow & Pulleine, 1918. First synonymised by Main, 1985, p. 13.

## DIAGNOSIS

♂♂♀♀ of *Idiommata* are readily distinguished from those of all other Australian barychelid genera by the combination of very extensive dense scopula on the legs and paired claws half the size of the tufts.

Carapace hirsute. Fovea slightly procurved. Clypeus absent. Eyes in 3 rows, set on distinct tubercle. Rastellum absent or consisting of a broadly produced area of short sharp spines. Intercheliceral face sometimes with 4-6 short pointed setae in the upper inner corner. Maxillae with less than 10 cuspules; heel and anterior lobe slightly produced; serrula absent; lyra (♂♂♀♀) consisting of 15-20 clavate setae in an irregular

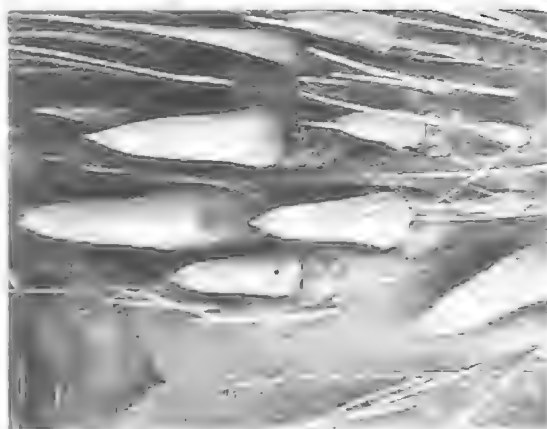


FIG. 29. Scanning Electron Micrograph. *Idiommata* sp., peg setae on upper prolateral face of chelicera.

line, sometimes very weak or absent. Cuspule microstructure: c. 60 µm in maximum diameter; intercrest distance, c. 0.6 µm apart; profile, long pointed cones; ridge direction, convergent very fine microridges; cuspule interspace, 2 or more diameters. Labium short, without cuspules. Sternum cordate with 2 or 3 pairs of small, round to oval and marginal sigilla. Females with few spines on legs I and II. Scopula of ♂♂♀♀ thick and entire on metatarsi and tarsi I; thick but sometimes divided by setae on tarsi II-IV, distal on metatarsi III, IV. Paired claws with 2 rows of teeth in ♂♂, claws of ♀♀ with one row of teeth or bare. Paired claws of leg I of ♀♀ much smaller than tufts and c. half size of claws on leg IV. ♀♀ with preening combs of slender setae on metatarsi III and IV. Abdomen usually without pattern. Four spinnerets; PMS small to almost atrophied. ♂♂ tibia I with distal ventral spur bearing a short dorsal spine with an opposed short prolateral spine and triangular supportive apophysis. ♂ palpal bulb pyriform with single spiralled keel. Spermathecae of ♀♀ consist of two low pouches, one on each side.

## SPECIES INCLUDED

*Idiops blackwalli* O. P., Cambridge  
*Idiommata fusca* Koch, 1874  
*Lampropodus scintillans* Rainbow & Pulleine, 1918  
*Lampropodus iridescens* Rainbow & Pulleine, 1918

## MISPLACED SPECIES

*Idioctis palmarum* Hogg, 1902 is placed in *Ozicrypta*. *Idiommata schomburgki* Karsch, 1879 was included in the synonymy of *Aganippe subtristis* O.P. Cambridge (Idiopidae) by Main (1985). Main (1982) made some taxonomic chan-



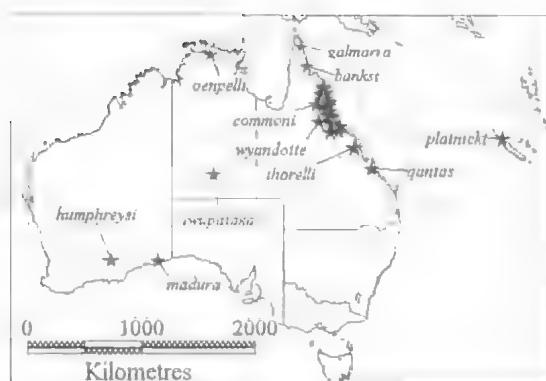


FIG. 30. Records of *Mandjelia* in Australia & New Caledonia.

ges without giving reason, e.g., both *Idiommatia sordida* Rainbow, 1898 and *I. crassipes* Rainbow, 1898 were transferred to *Idioctis* although the latter had not been seen. *Idiommatia sordida* was transferred to *Sipalolasma* (Raven, 1985b) but is here referred to *Nihoa*. *Idiommatia crassipes* Rainbow, 1898 is here transferred to *Nihoa* from *Idioctis*.

#### DISTRIBUTION

*Idiommatia* is presently known mostly from xeric areas but also from rainforest throughout mainland Australia.

#### REMARKS

The most diagnostic characters of *Idiommatia* are the very conservative spiralled form of the palpal bulb and the large size of the tibial spur.

Treatment of *Idiommatia* here is not monographic. Species are assigned to the genus which is diagnosed. It will also be more useful to treat all species like *Idiommatia* in one paper rather than split them between two, as was case with *Aname* in Raven (1981, 1985b). The genus is very homogenous and none of the new species known appear to present any major changes in the above generic diagnosis.

I have been unable to locate juvenile material listed in *Idiommatia* from Mt Scratchley, New Guinea (Rainbow, 1898).

A number of lapsus calami were noted by Main (in litt. and on reprint from Main). Specimens Main (1982: 588) attributed to *Idioctis* are described as *Nihoa gressitti*; the validity of the genus *Monodontium* was considered doubtful (but see Raven, 1985b) but it here seen to be a distinctive genus.

#### *Mandjelia* Raven, gen. nov.

##### DIAGNOSIS

Differs from all Australian barychelid genera, except *Tritame*, in the many (30 or more) cuspules on the maxillae. However, unlike *Tritame*, the cuspules are not small, densely placed and spread away from the inner angle of the maxillae.

##### DESCRIPTION

Carapace rounded, hirsute. Fovea short, straight (♂♂) to distinctly procurved (♀♀). Clypeus absent. Eyes on tubercle in 3 rows. Maxillary lyra absent. Maxillae with c.30-120 cuspules grouped on inner corner, heel slightly produced, anterior lobes rounded. Cuspule microstructure: c.20-50µm in maximum diameter; intercrest distance, 1µm apart; profile, bilaterally uniform balloon; ridge direction, continuous over smooth crest, like thumbprints; cuspule interspace, 2 or more diameters. Rastellum absent to weak but sessile. Males rarely with basomesal granules on cheliceral furrow. Labium wider than long, without cuspules. Sternum cordate, about as long as wide, 3 pairs of round, marginal sigilla. Preening combs present or absent in ♂♂♀♀ on retroventral and sometimes

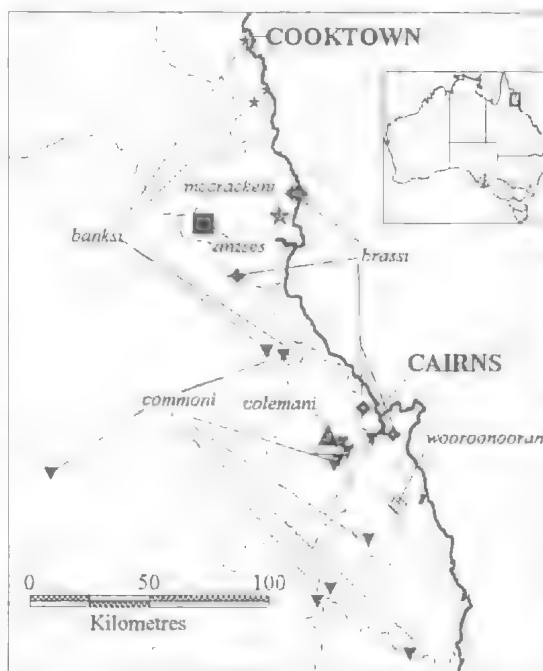


FIG. 31. Records of *Mandjelia* in far northern Queensland with catchment boundaries.

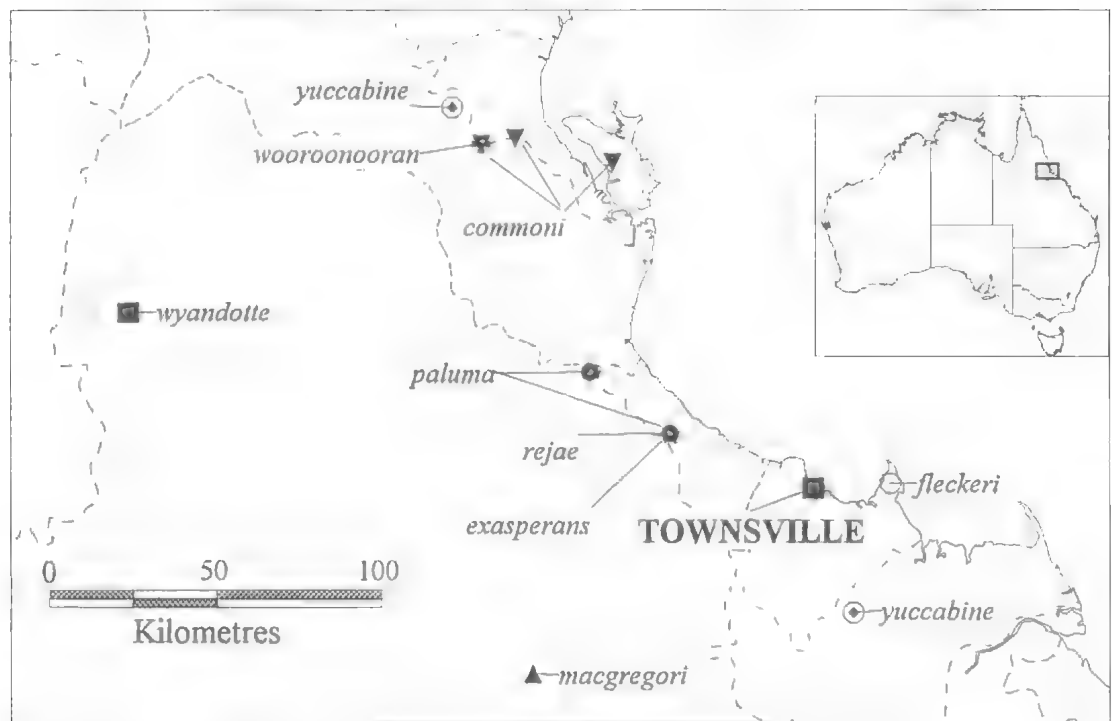


FIG 32. Records of *Mandjelia* in northern Queensland with catchment boundaries dotted.

also on proventral metatarsi III, IV. Claws on I, IV of similar size. Dorsal abdomen mottled; legs without annulations. Two to four spinnerets; PMS (if present) up to 0.5 times width of PLS,

sometimes reduced to only minute caps. FEMALES. With few spines on legs I, II. Scopula usually entire on metatarsi and tarsi I, II, sometimes less extensive, rarely absent; thin and divided by setae, if present, on metatarsi III; absent on metatarsi IV in most species. Basifemoral thorns present or absent. Thorn spines on distal femora and patellae III, IV, sometimes present. One row of teeth on paired claws medially. Claw tufts well developed on palp; palpal claw about as high as tufts, edentate. Spermathecae consist of one or two pairs of dimorphic lobes arising from separated basal mounds. MALES. Tibia I with ventral distal spur and often with up-curved megaspine with small microspur opposed by slender down-curved megaspine laterally or unarmed. Palpal bulb simple, pyriform, with one or more keels on embolus, with broad spiral. Cymbium dimorphic, lobes subequal; sometimes retrolaterally concave when viewed from above. Claws with 1-2 rows of teeth on legs I-IV.

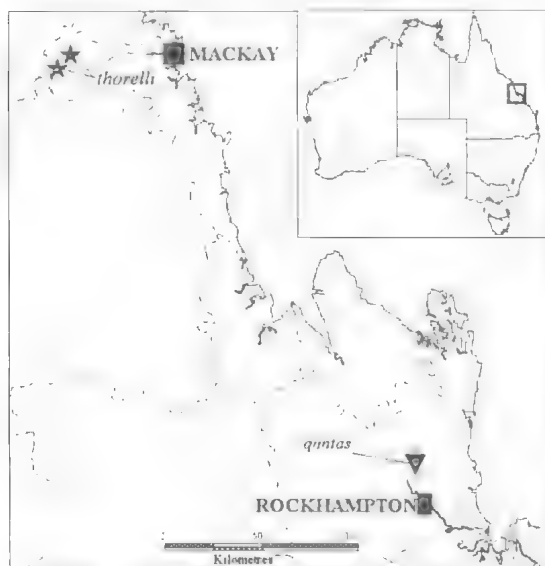


FIG 33. Records of *Mandjelia* in central coastal Queensland with catchment boundaries dotted.

TYPE SPECIES

*Mandjelia brassi* sp. nov.

## ETYMOLOGY

From the type locality of *Mandjelia platnicki*, Mandjelia. The adoption of that name indicates the putatively close relationships between that species and congeners in Australia.

## REMARKS

The New Caledonian species is treated after the section on Australian Barychelinae.

## DISTRIBUTION, BURROW, AND HABITAT

*Mandjelia* occurs from Captain Billy Creek, NEQ, south through coastal and montane areas to the Mt Etna Caves, north-west of Rockhampton, MEQ. It occurs also in several localities in western Queensland, Northern Territory and in the south-western corner of WA. *M. platnicki*, sp. nov. is found in northern New Caledonia at the mountain from which the genus takes its name, Mandjelia, just south of Bonde. Spiders of most *Mandjelia* species are found in rainforest. However, notable exceptions are the occurrence in vine thickets (*M. qantas*), open eucalypt forest (*M. macgregori*, *M. nugaruga*), heath (*M. colemani*), and Gimlet woodland (*M. humphreysi*).

The burrow varies from a (plesiomorphic) barrel-shaped tube with a door on each end (*M. platnicki*, *M. brassi*) through a single-doored burrow (*M. qantas*) to the Y-shaped tube with a door at each entrance (*M. banksi*).

Of the 23 new species described, 12 are each known from only one specimen, and 18 are each from only one locality.

## INCLUDED SPECIES

*Mandjelia unzses* Raven & Churchill, sp. nov.  
*Mandjelia banksi* Raven & Churchill, sp. nov.  
*Mandjelia brassi* Raven & Churchill, sp. nov.  
*Mandjelia colemani* Raven & Churchill, sp. nov.  
*Mandjelia communi* Raven & Churchill, sp. nov.  
*Mandjelia exasperans* Raven & Churchill, sp. nov.  
*Mandjelia fleckeri* Raven & Churchill, sp. nov.  
*Mandjelia galmarra* Raven & Churchill, sp. nov.  
*Mandjelia humphreysi* Raven & Churchill, sp. nov.  
*Mandjelia iwupataka* Raven & Churchill, sp. nov.  
*Mandjelia macgregori* Raven & Churchill, sp. nov.  
*Mandjelia madura* Raven & Churchill, sp. nov.  
*Mandjelia mcrackeni* Raven & Churchill, sp. nov.  
*Mandjelia nugaruga* Raven & Churchill, sp. nov.  
*Mandjelia oenpelli* Raven & Churchill, sp. nov.  
*Mandjelia paluma* Raven & Churchill, sp. nov.  
*Mandjelia platnicki* Raven, sp. nov. (see p. 629)  
*Mandjelia qantas* Raven & Churchill, sp. nov.  
*Mandjelia rejae* Raven & Churchill, sp. nov.  
*Tritane thorelli* Raven, 1990

*Mandjelia woornooran* Raven & Churchill, sp. nov.  
*Mandjelia wyandotte* Raven & Churchill, sp. nov.  
*Mandjelia yuccabine* Raven & Churchill, sp. nov.

KEY TO AUSTRALIAN SPECIES  
OF MANDJELIA

## FEMALES

- 1 Palpal tarsus with spines . . . *M. macgregori*  
 Spines absent from palpal tarsus . . . . . 2
- 2(1). Posterior median spinnerets distinct to minute  
 (Figs 46D, 38I) . . . . . 3  
 Posterior median spinnerets absent . . . . . 10
- 3(2). Posterior median spinnerets small but distinct  
 (Fig. 38I) . . . . . 4  
 Posterior median spinnerets minute, indistinct  
 (Fig. 58D) . . . . . 8
- 4(3). Maxillae with 90-110 cuspules . . . . . 5  
 Maxillae with up to 50 cuspules . . . *M. qantas*
- 5(4). Several basifemoral thorn setae . . . *M. madura*  
 Basifemoral thorn setae absent . . . . . 6
- 6(5). Spermathecae divided (Fig. 46D) . . . . .  
*M. iwupataka*  
 Spermathecae undivided (Fig. 53D) . . . . . 7
- 7(6). Spermathecae inwardly directed  
 (Fig. 53D) . . . . . *M. paluma*  
 Spermathecae outwardly directed . . . *M. thorelli*
- 8(3). Basifemoral thorns (I, II) present . . . . . 9  
 Basifemoral thorns absent . . . *M. mcrackeni*
- 9(8). Basifemoral thorns present on femora IV;  
 PMS oblong (Fig. 58D) . . . . . *M. wyandotte*  
 Basifemoral thorns absent on femora IV; PMS  
 domed caps evident effectively as tufts of hair  
 (Fig. 49G) . . . . . *M. oenpelli*
- 10(2). Scopula at most for 2/3 of ventral length  
 of metatarsi I . . . . . 11  
 Scopula for at least 5/6 of ventral length  
 of metatarsi I . . . . . 13
- 11(10). No scopula on metatarsi III, IV . . . . .  
*M. woornooran*  
 Scopula present on metatarsi III, IV . . . . . 12
- 12(11). Abdomen ventrally mostly pallid; eye group  
 wide, ALE-ALE interspace clearly greater than  
 ALE-PLA . . . . . *M. fleckeri*  
 Abdomen ventrally mostly brown; ALE-ALE  
 interspace equal to ALE-PLA . . . *M. yuccabine*
- 13(10). Several basifemoral thorn setae . . . *M. banksi*  
 Basifemoral thorn setae absent or only 1 . . . 14
- 14(13). Spermathecae are totally only two separated  
 undivided lobes (Fig. 48E) . . . . . *M. nugaruga*  
 Spermathecae are four separated lobes or  
 are two divided lobes (Figs 35D, 40F) . . . 15
- 15(14). Spermathecae a pair of antennate domes  
 (Fig. 35D) . . . . . *M. brassi*  
 Spermathecae a pair of unequal lobes on each  
 side (Fig. 40F) . . . . . *M. communi*

	<i>colemani</i>	<i>humphreysi</i>	<i>ivupataka</i>	<i>macgregori</i>	<i>madura</i>	<i>mccrackeni</i>	<i>oenpelli</i>	<i>paluma</i>	<i>qantas</i>	<i>thorelli</i>	<i>wyandotte</i>
Size of PMS	small	minute	distinct	distinct	distinct	minute	absent	long	distinct	distinct	minute
No. maxillary cuspules	40	60	90-100	50	90-110	50-60	80-90	50-60	20-40	c.100	50-70
Dorsal abdomen, pattern	fishbone	fishbone	fishbone	fishbone	fishbone	mottled	mottled	mottled	mottled	mottled	mottled
♂ Tibial spur position	distal	subdistal	?	?	?	?	?	distal	?	distal	?
Tibial megaspine	long straight	long curved	?	?	?	?	?	long curved	?	long curved	?
Spur size	slender	slender	?	?	?	?	?	stout	?	short	?
Upper megaspine	short	elongate	?	?	?	?	?	conical	?	long	?
Tibial microspur	small	absent	?	?	?	?	?	short	?	long	?
Palpal bulb	paraembolic process	long pyriform	?	?	?	?	?	short simple	?	simple	?
Keels on bulb	form a process	long high	?	?	?	?	?	absent	?	absent	?
Embolic origin	fast	gradual	?	?	?	?	?	sudden	?	sudden	?
Tooth rows: legs I(IV)	2(2)	2(2)	?	?	?	?	?	2(2)	?	2(2)	?
♀ Spermathecal lobes	?	?	1+1	2+2	2+2	1+1	2+2	1+1	1+1	1+1	2+2
Spermathecae shape	?	?	G-shaped	simple lobes	mounds	U-shaped	long simple	long simple	broad lobes	wide simple	long simple
Rastellum	absent	absent	absent	weak	low process	low process	low spinose	weak	spinose mound	absent	absent
Patellar thorns III(IV)	absent	absent	absent	absent	absent	absent	absent	absent	III & IV	absent	absent
Basifemoral thorns	?	?	absent	I, II, IV	I, II	absent	I, II	I, IV	II, IV	absent	I, II, IV
Tibia of patella	?	?	equal	greater	greater	less	less	equal	less	greater	less
Scopula metatarsi III(IV)	1/3(1/8)	1/3(1/4)	1/2(1/3)	5/6	1/2	1/4(absent)	1/3(1/4)	1/5(absent)	absent	1/4	1/3-1/5
Preening combs III(IV)	absent	absent	present	present	absent	absent	present	present	pro & retro	absent	present
Autapomorphy	palpal process	bulb	spermathecae	spinose p. tarsi	spermathecae	spermathecae	spermathecae	spur+bulb			
Habitat	heath	woodland	woodland	woodland	woodland	rainforest	woodland	open forest	vine thicket	rainforest	woodland
Distribution	Davies Ck. NP, NEQ	SW WA	Standley Chasm, NT	Bluff Down, NWQ	Madura, SW WA	Thornton Peak, NEQ	Oenpelli, NT	Mt Halifax, NEQ	Mt Etna, NEQ	Eungella NP, MEQ	Wyandotte Stn, NEQ

Table 3. *Mandjelia* species with distinct posterior median spinnerets.

	<i>anzses</i>	<i>banksi</i>	<i>brassi</i>	<i>cominoni</i>	<i>exasperans</i>	<i>fleckeri</i>	<i>galmarra</i>	<i>nuganuga</i>	<i>regae</i>	<i>woononooran</i>	<i>yuccabine</i>
Size of PMS	absent	absent	absent-minute	absent	absent	absent	absent	absent	minute	absent	absent
No. maxillary cuspules	40	40-60	40-60	12-50	30-40	40	50-60	55-60	60-80	30-60	40
Dorsal abdomen, pattern	fishbone	fishbone	mottled	mottled	mottled	mottled	mottled	mottled	mottled	mottled	dark
♂ Tibial spur position	distal	?	subdistal	distal	distal prolateral	subdistal	distal	?	distal	subdistal	?
Tibial megaspine	short	?	long >straight	v. short	conical	long	short	?	long	long	?
Spur size	small conical	?	long slender	stout	v. stout	long slender	low broad	?	v small	low conical	?
Upper megaspine	short	?	long	short	stout curved	long curved	hooked	?	conical	short hooked	?
Tibial microspur	absent	?	small	small	stout	small	stout	?	absent	conical	?
Palpal bulb	basal process	?	pyriform	large, simple	squat	long	simple	?	simple	simple	?
Keels on bulb	absent	?	absent	absent	long broad + 2	3 v small	absent	?	absent	absent	?
Embolus origin	fast	?	fast	gradual	distal	gradual	gradual	?	rapid	rapid	?
Tooth rows: legs I (IV)	2(1)	?	2(2)	2(2)	2(1)	2(2)	2(1)	?	2(2)	2(2)	?
? Spermathecal lobes	?	1 + 1	1 + 1	2 + 2	?	2 + 2	?	1 + 1	?	2 + 2	2 + 2
Spermathecae shape	?	single lobes	2 low mounds	4 lobes	?	4 long lobes	?	simple lobes	?	long lobes	short lobes
Rastellum	absent	low mound	low mound	weak	absent	absent	absent	absent	absent	absent	absent
Patellar thorns 3(4)	absent	absent	absent	present	absent	absent	absent	absent	absent	weak	absent
Basifemoral thorns	?	I, II, IV, P	absent	IV weak	?	absent	?	absent	?	absent	absent
Tibia I cf patella	?	greater	greater	less	?	greater	?	greater	greater	less	equal
Scopula metatarsi III(IV)	1/4(absent)	1/3(1/4)	1/2(1/4)	>absent	absent	1/5(1/6)	2/3(1/3)	1/4	absent	absent	1/4(1/6)
Preening combs III(IV)	weak	absent	present	present	absent	present	absent	IV weak	IV weak	III weak	IV only
Autapomorphy	bulb			spur	spur		spur	spur	spur	spermathecae	spermathecae
Habitat	rainforest	woodland	rainforest	rainforest	rainforest	rainforest	woodland	woodland	rain-forest	rainforest	rainforest
Distribution	Windsor Tbl. NEQ	Mt Cook, NEQ	NE Coastal, Q	NE coastal, Q	Mt Halifax, NEQ	Mt Cleveland, NEQ	Capt Billy Ck. CYP	L. Nuga, Nuga, CQ	Mt Halifax, NEQ	Mt Bellenden Ker, NEQ	Yuccabine Ck. NEQ

Table 4. *Mandjelia* species without readily evident posterior median spinnerets.



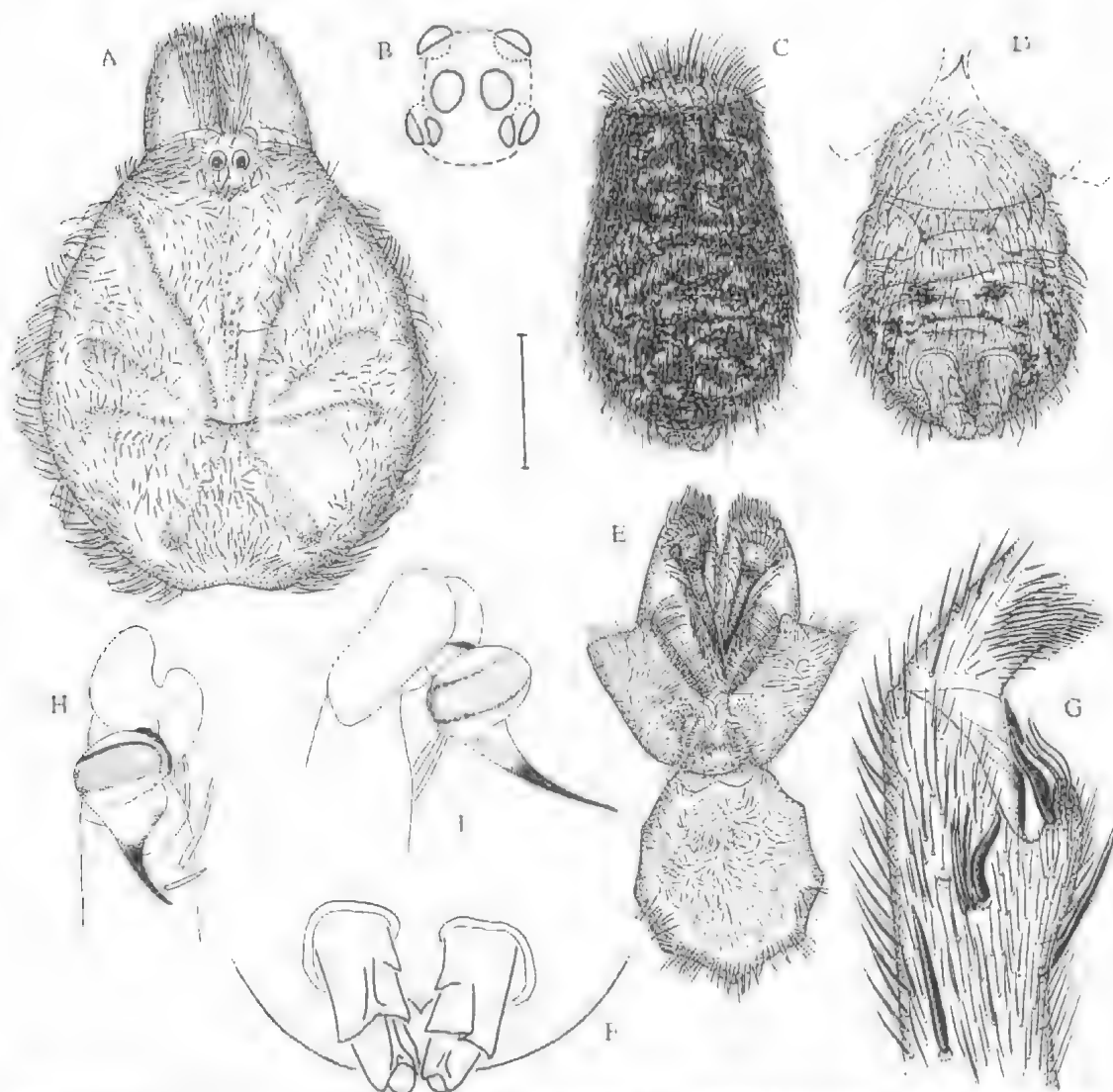


FIG. 34. *Mandjelia braxsi* sp. nov., holotype ♂ (QMS7158). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, D, abdomen, dorsal (C), ventral view (D); E, chelicerae, sternum, maxillae & labium, ventral view; F, spinnerets, ventral view; G, tibia & metatarsus I, prolateral view; H, I, cymbium & palpal bulb, ventral (H), prolateral (I) view. Scale line = 1 mm (B, F, G); 0.5 mm (H, I); 2 mm (A, C-E).

#### MALES

1. Posterior median spinnerets distinct (Fig. 38I) 2  
Posterior median spinnerets minute or absent (Fig. 42E) . . . . . 4
- 2(1). Palpal bulb with long coniform process near embolic origin (Fig. 38H) . . . . . *M. colemani*  
Palpal bulb without long process . . . . . 3
- 3(2). Palpal bulb with 2 low keels near embolic origin . . . . . *M. thorelli*  
Palpal bulb without such keels (Fig. 52H) . . . . . *M. paluma*

- 4(1). Palpal bulb with paraembolic process on inner face or with embolic keels (Figs 36G, 38H, 41I-K) . . . . . 5  
Palpal bulb simple pyriform with no strong or distinct modifications . . . . . 7
- 5(4). Palpal bulb with paraembolic process on inner face (Fig. 36G) . . . . . *M. anzsles*  
Palpal bulb with keels along embolus . . . . . 6
- 6(5). Tibial spur long, slender (Fig. 45F) . . . . . *M. humphreysi*  
Tibial spur short, snub-like (Fig. 41D-F) . . . . . *M. exasperans*

- 7(6). Tibial spur set distinctly back from distal edge (Fig. 34G) . . . . . 8  
 Tibial spur on distal corner (Fig. 39F) . . . . . 11
- 8(7). Upper megaspine elongate (Fig. 42G) . . . . . 9  
 Upper megaspine short (Fig. 55G) . . . . .  
 . . . . . *M. woaroonboran*
- 9(8). Fine keels at base of embolus (Fig. 42J) . . . . .  
 . . . . . *M. fleckeri*  
 Base of embolus smooth . . . . . 10
- 10(9). Embolus originates abruptly off basal portion (Fig. 34H) . . . . . *M. brassi*  
 Embolus originates gradually off basal portion (Fig. 44C) . . . . . *M. galmarra*
- 11(7). Microspur absent; upper megaspine small or slender (Fig. 55G) . . . . . *M. regae*  
 Microspur distinct; upper megaspine short, strong (Fig. 39F) . . . . . *M. commoni*

AUSTRALIAN SPECIES OF *MANDJELIA*  
 R. J. RAVEN & T. B. CHURCHILL

***Mandjelia brassi* Raven & Churchill, sp. nov.**  
 (Figs 5A, 6A, 20C, 31, 34, 35, Table 3)

**MATERIAL EXAMINED**

**TYPES.** Holotype ♂, Cape Tribulation, 'Pilgrim Sands', 16°05'S 145°26'E, 27 Aug 1988, JAG, QMS7158; ♂ paratype, same data, but 28 Aug 1988, JAG, QMS12265; allotype ♀, same locality, taken with eggs, 25 Aug 1988, RR, QMS12501; ♂, 3 km W. Cape Tribulation (Site 6), 16°05'S 145°27'E, rainforest, 500m, pitfall traps, 23 Sep-7 Oct 1982, GBM, DY, GT, QMS1637; 1 ♀, Stewart Ck, 4 km NNE Mt Spurgeon (Camp 11), 16°24'S 145°13'S rainforest at 1250-1300m, 15 Oct 1991, GBM, HJ, QMS19130; ♂, Whitfield Ra, 16°54'S 145°43'E, 28 Aug-19 Oct 1991, GBM, HJ, QMS19669; 1 ♂, Copperlode Dam, near Cairns, 16°54'S 145°43'E, 29 Oct-1 Nov 1991, QMS19642; ♀, Pine Ck (CSIRO Tower), 17°00'S, 145°50'E, 80m, 12 Sep-20 Oct 1991, GBM, HJ, QMS19670. All in NEQ.

**DIAGNOSIS**

Males differ from those of *M. commoni* and *M. anzses* in the tibial spur being set back clearly from distal edge and from *M. anzses* in having 2 rows of teeth on claws of leg IV, and smaller spots on the abdomen dorsally; ♀♀ differ from those of *M. commoni* in having antennate domed spermathecae instead of two divided lobes.

Large, carapace length c.7-12. 40-60 cuspsules on maxillae, PMS absent. Rastellum a low mound. Preening combs distinct in ♀♀; weak in ♂♂. Lateral eye ratio c.1.4-1.5. Scopula for full length to distal 5/6 of metatarsi I, II. Abdomen with 3 pairs of pallid spots dorsally. **FEMALES.** Tarsi III, IV incrassate and ventrally pallid for

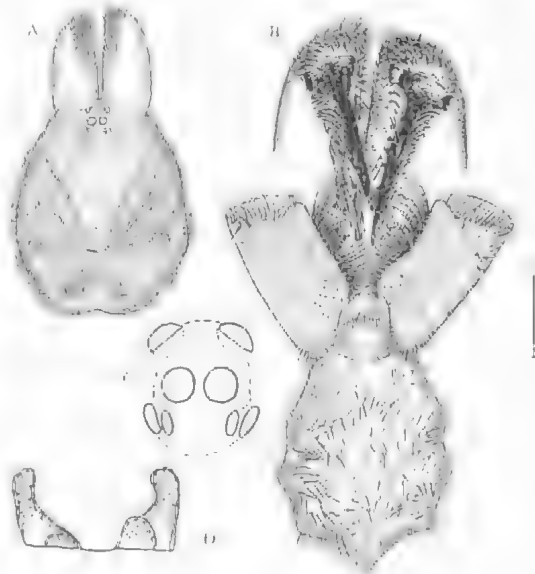


FIG. 35. *Mandjelia brassi* sp. nov., allotype ♀ (QMS12501). A, carapace & chelicerae, dorsal view; B, chelicerae, sternum, maxillae & labium, ventral view; C, eye group, dorsal view; D, spermathecae. Scale line = 5mm (A), 2.5mm (B), 1.2mm (C); 0.7mm (D).

distal 3/4. Basifemoral thorns and thorn spines absent but strong thorn-like setae on prolateral faces of leg coxae. Spermathecae two, each a low coniform mound with longer thick lobe curves to twice height of basal mound. Paired claws dentate; palpal claw bare; palpal tarsi aspinose. **MALES.** Tibia I with long curved spur starting at c. 1/3 proximal length; with long straight megaspine; distal excavation pallid, soft, long; microspur very small, obscured by long curved spine. Bulb squat, pyriform; embolus long. Claws with 2 rows of teeth on legs I, IV.

**ETYMOLOGY**

For Leonard Brass, guide and leader of the 1948 Archbold Expedition to Cape York (Brass, 1953).

**DESCRIPTION**

**HOLOTYPE MALE QMS7158**

Carapace 6.96 long, 5.76 wide. Abdomen 5.28 long, 3.44 wide. Total length, 14.

**Colour.** Carapace and chelicerae brown, legs orange brown. Abdomen dorsally brown with 3 pairs of pallid white areas centrally and intervening narrow brown chevrons ventrally.

**Carapace.** Uniform cover of short black bristles, longer and thicker on margins, between ALE and in posterior striae, and anterior margin; no distinct foveal pairs, line of 15-20

anteromedially; c. 6-8 between PME. Bush of long silvery brown hairs on caput, interstitial ridges and densest on margins. Clypeus absent. Striae distinct, glabrous. Fovea short, straight.

*Eyes.* Group occupies 0.32 of head-width. Back row straight. Group front width, back width, length, 46:52:46. MOQ front width, back width, length, 30:36:23. AME:ALE:PME:PLE, 19:16:11:15. Eye interspaces: AME-AME, 0.2; AME-ALE, 0.6; ALE-ALE, 0.8, PME-PLE, 0.1; PME-PME, 1.1; ALE-PLE, 1.2.

*Chelicerae.* Small; prodorsally with long black bristles and brown hairs. Rastellum absent. Furrow promargin with 8 teeth, basomesally with few fine granules.

*Labium.* 1.12 wide, 0.52 long; cluster of fine setae centrally, few fine behind them. Labiosternal suture two non-confluent sigilla.

*Maxillae.* 1.88 long in front, 2.40 long behind, 0.92 wide; with c.45-50 short blunt cuspules in triangular inner area. Heel angular; anterior lobe distinct.

*Sternum.* 3.56 long, 3.04 wide; margins hirsute. Sigilla all small, oval, marginal.

*Legs.* Long brown bristles and thin layer of silver hair. Tibia I with long curved spur starting at c. 1/3 proximal length; with long straight megaspine; distal excavation pallid, soft, long; microspur very small, obscured by long curved spine. Thorn spines absent; preening combs a pair of weak setae retrolaterally on III, IV. Scopula. Metatarsi: I, II, full, for distal 5/6, with few setae but not parting scopula; III, in 1/3 divided; IV, distal 1/4-1/5, parted by setal band into two long triangular areas. Scopulate area of ventral tarsi I-III and distal 1/5 of metatarsi I, II and ventrolateral band of tarsi IV pallid. Tarsi: I, entire, dense, cuticle not obscured and bases not discernible, line of fine pale setae distally parts hairs; II, as for I but setal line for full length; III, as for II but parting band is 4-5 fine pale setae wide; IV similar to III but setae noticeably thicker and brown.

	I	II	III	IV	Palp
Femur	5.28	5.04	4.72	6.17	3.20
Patella	3.20	3.12	2.64	2.83	1.92
Tibia	4.00	4.24	3.52	5.50	2.40
Metatarsus	4.08	3.84	4.72	7.50	-
Tarsus	2.32	2.24	2.24	2.83	1.20
Total	18.88	18.48	17.84	24.83	8.72

*Spines.* I: fe p2, d5, pa 0, ti p2, v5 + megaspine, me p1, v1. II: fe p2, d4, pa 0, ti p2, v7, me p1, v2. III: fe p3, d6, r3, pa p3, r1, ti p2, d1, r2, v10, me p4, r3, v10. IV: fe d5, r2, pa r1, v1, ti p2, d1, r3, v10, me p4, r6, v9. Palp: fe p1, d2, pa 0, ti p3, v3.

*Claws.* 5 teeth in outer rows, inner with 4 (prolateral claw) or 8 (I); 3-5 in each of two rows on IV, fewer in inner rows.

*Trichobothria.* Two rows, each of c. 10 for full length of tibiae; c. 20 in curving row on metatarsi; c. 40 filiform and 3 fine clavate (proximally) on tarsi.

*Palp.* Bulb squat, pyriform; embolus long; cymbium bipartite.

Abdominal pattern obscured partially by dense golden brown bush of hair.

*Spinnerets.* PMS absent. PLS length of basal, middle, apical, and total articles 0.90, 0.36, 0.24, 1.50, respectively.

#### ALLOTYPE FEMALE QMS12501

Carapace 11.83 long, 9.00 wide. Abdomen 15.17 long, 11.83 wide. Total length, 32.

*Colour.* Carapace and legs brown, chelicerae dark brown. Abdomen damaged, dorsally no pattern discernible; ventrally pallid.

*Carapace.* Uniform moderately dense cover of fine black hairs darkening carapace; long bristles and hairs on lateral margins; shelf of hirsute cuticle below carapace above coxae; 4-6 erect black bristles beside posterior striae; c. 10 strong and several finer anteromedial bristles, lateral caput with many short black bristles; c. 5 long and several short bristles and hairs between PME and also between ALE. Fovea distinctly procurved; striae narrow, all save anterior pair setose.

*Eyes.* Group occupies 0.29 of head-width; front width, back width, length, 69:77:72. Back row procurved. MOQ front width, back width, length, 50:54:44. AME:ALE:PME:PLE, 20:27:17:24. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.9; ALE-ALE, 1.2; PME-PLE, 0.1; PME-PME, 1.6; ALE-PLE, 1.7.

*Chelicerae.* Long, strong; prodorsally with few erect black bristles and many shorter mixed with fine black hairs, laterally a lightly setose band followed by a narrow setose band. Rastellum a low mound with many short thick curved setae. Furrow promargin with 8 large spaced teeth, basomesally with 7 small teeth and 20-25 granules.

*Labium.* 1.60 wide, 0.88 long; cluster of thicker setae centrally, fine setae lateral and posterior to that. Labiosternal suture a narrow groove of two joined sigilla.

*Maxillae.* 2.96 long in front, 4.40 long behind, 1.84 wide; with c. 40-50 cuspules in inner angle, not on mound. Heel produced; anterior lobe distinct.

**Sternum.** 5.68 long, 4.80 wide. Sigilla all oval, marginal, indistinct.

**Legs.** Tarsi III, IV incrassate and ventrally pallid for distal 3/4. Basifemoral thorns absent. Thorn spines absent, but thick setae distally on femora and proximal patellae III, IV, and patella III spines triangular. Preening combs: 1 each of 3 strong setae on metatarsi III, IV.

	I	II	III	IV	Palp
Femur	7.50	7.17	5.17	6.67	5.83
Patella	4.83	4.50	3.67	4.17	3.50
Tibia	5.00	4.17	3.00	5.67	3.33
Metatarsus	4.00	3.89	4.50	7.50	—
Tarsus	2.50	2.67	2.00	3.33	2.83
Total	23.83	22.40	18.33	27.34	15.50

**Scopula.** Metatarsi: I, II, full, dense, with setae intermixed (I) or in narrow line (II); III, thin, divided by bristles in two triangles for just over 1/2 the length; IV, similar but in distal 1/4, triangles thinner. Tarsi: I, II, full, dense, entire save for subtle single line of slender setae; III, moderately dense, divided by setal band 2-4 wide; IV, similar, setal band 4-6 wide.

**Spines.** I: fe p2, d4w, pa 0, ti v3, me v2. II: fe p2, d4w, pa 0, ti p2, v5, me v3. III: fe p3, d5w, r3, pa p2, r1, v1, ti p2, r3, v8, me p4, r4, v10. IV: fe d6w, r1, pa r1, ti r4, v11, me p6, r7, v15. Palp: fe p1 d3w, pa 0, ti p1, v7.

**Claws.** 2 teeth (I, IV); palpal claw bare, slightly smaller than tuft and paired claws.

**Trichobothria.** Two rows, each of c.13 for full on tibiae; c.21 in curved row on metatarsi; 4-5 small clavate, c.20 filiform on tarsi.

**Spermathecae.** Two, each a low coniform mound with longer thick lobe curving to twice the height of the basal mound.

**Spinnerets.** PMS minute, each a minute bump with 3-4 setae radiating, PLS length of basal, middle, apical, and total articles 2.52, 0.72, 0.44, 3.68 respectively.

#### DISTRIBUTION, BURROW, AND HABITAT

Rainforest at sea-level to 500 m altitude, at Cape Tribulation and just north of Mt Spurgeon at 1300 m, northeast Queensland. The holotype was found resting on the sloping bank of a narrow creek about 1.5 m above water at night. Females were found in frass at the base of palms (*Aconitophoenix* sp.) and on tree in frass at the bases of fronds. The burrow is a short barrel-shaped tube c.3-4 cm long with a soft floppy door on each end. The tube is made of thin paper-like silk and has some encrusting frass.

#### SYMPATRIC MYGALOMORPHS

*Idioctis yerlata* Churchill & Raven, *Sason colemani* Raven, *Mandjelia commoni*, *Mandjelia anzses*, *Trittame kochi* Raven, *Trittame loki* Raven (Barychelidae); *Masteria toddae* Raven (Dipluridae); *Conothele* sp. (Ctenizidae); *Phlogiellus* sp. (Theraphosidae).

#### *Mandjelia anzses* Raven & Churchill, sp. nov. (Figs 31, 36, Table 3)

#### MATERIAL EXAMINED

TYPL. Holotype ♂, Mt Windsor, base camp, 16°12'S 145°05'E, NEQ, Dec 1980, A.N.Z.S.E.S. Expedition, QMS1618.

#### DIAGNOSIS

Males differ from those of *M. commoni* in the much more slender spur and associated megaspines, the vestigial (cf. well developed) microspur on tibia I, and the long tapering embolus and bulb. The extensive pallid spots dorsally on the abdomen readily distinguish this species from *M. commoni*. It differs from *M. banksi* in that the scopula is much less extensive (1/3 vs 5/6) on metatarsi I and elsewhere and the lateral eye ratio is much greater than 1 (c.1.3).

Medium-sized, carapace length c.6. About 40 cuspules on maxillae. PMS absent. Rastellum absent. Preening combs weak. Lateral eye ratio c.1.3. Abdomen with narrow brown chevrons dorsally. MALES. Tibia I with low proventral distal spur with long curved megaspine; microspur vestigial, associated megaspine long bent slightly at base. Bulb subpyriform with moderately short embolus and triangular pointed process on face of bulb next to tibia. Scopula in distal 1/3 of metatarsi I, II. Retrolateral face of cymbium concave. Claws with two rows of teeth on I, 1 row on retrolateral face on IV. FEMALES. Unknown.

#### ETYMOLOGY

For the students and teachers who participated in the Australian New Zealand Scientific Expedition Society (A.N.Z.S.E.S.).

#### DESCRIPTION

##### HOLOTYPE MALE QMS1618

Carapace 5.84 long, 4.80 wide. Abdomen 6.72 long, 4.64 wide. Total length, 14.

**Colour.** Carapace, chelicerae, and legs yellow brown. Abdomen dorsally pallid with medial and 4 paired lateral narrow brown chevrons; ventrally pallid with few small brown flecks evident.

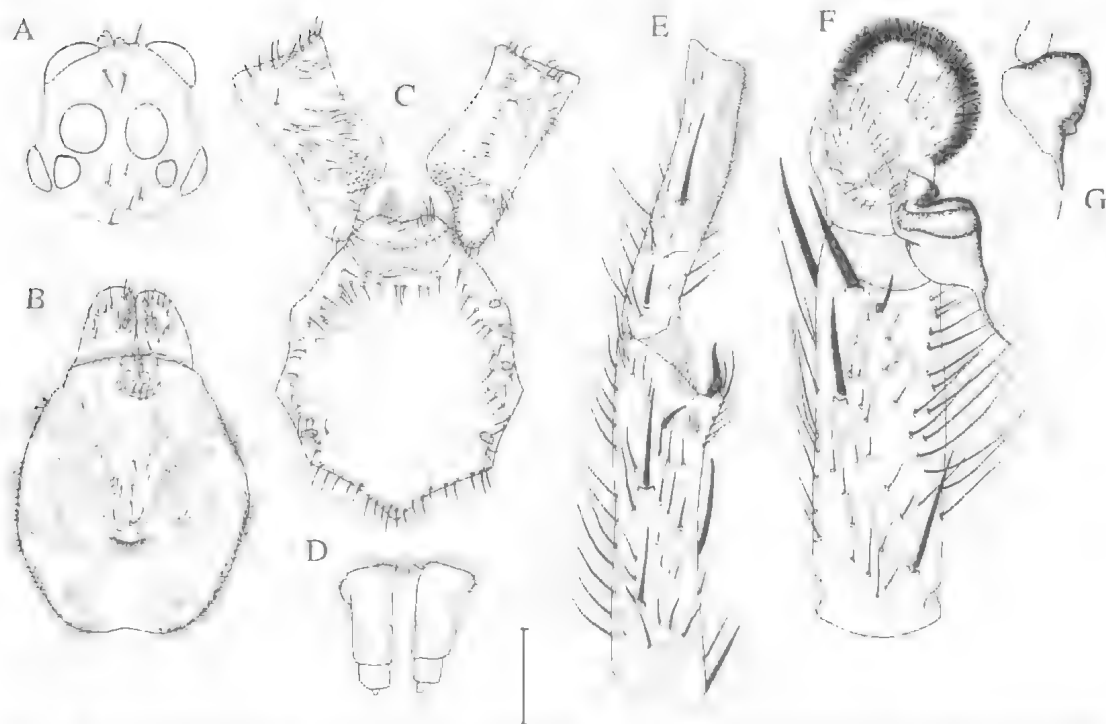


FIG. 36. *Mandjelia onzses* sp. nov., holotype ♂ (QMS1618). A, eye group, dorsal view; B, carapace & chelicerae, dorsal view; C, sternum, maxillae & labium, ventral view; D, spinnerets, ventral view; E, tibia & metatarsus I, prolateral view; F, cymbium & palpal bulb, ventral view; G, palpal bulb, retrolateral view. Scale line = 0.5mm (A, D, F, G); 1mm (C, E); 2mm (B).

**Carapace.** Bristles: many long, black on interstitial ridges and posterior margin; 8-10 long black posteriorly-directed bristles anteromedially, 7 long recurved black between ALE, 3 long curved and several shorter between PME; few strong beside posterior striae. Lateral margins with many strong black bristles and bush of silver hairs. Fovea short, procurved.

**Eyes.** Group occupies 0.28 of headwidth; group front width, back width, length, 40:47:40. Back row straight. AME:ALE:PME:PLE, 13:16:8:12. MOQ front width, back width, length 29:32:22. Eye interspaces: AME-AME, 0.3; AME-ALE, 0.7; ALE-ALE, 0.9; ALE-PLE, 1.2; PME-PLE, 0.1; PME-PLE, 1.5.

**Chelicerae.** Moderately long, black adpressed bristles. Rastellum absent. Furrow promargin with 9 teeth, basomesally with no granules; no intercheliceral tumescence.

**Labium.** 1.04 wide, 0.32 long; a short transverse glabrous ridge with fine setae posteriorly and strong bristles anteriorly.

**Maxillae.** 1.64 long in front, 2.08 long behind, 0.84 wide; with c.40 blunt cuspules in spaced

group on inner angle, not on mound; heel produced; anterior lobe broad, distinct.

**Sternum.** 3.00 long, 2.56 wide, separated from labium by broad shallow groove. Sigilla all oval, marginal.

	I	II	III	IV	Palp
Femur	4.17	3.92	4.08	5.08	2.75
Patella	1.83	2.33	1.17	2.58	1.42
Tibia	3.50	3.00	2.83	4.50	1.92
Metatarsus	3.58	3.00	3.67	5.75	—
Tarsus	2.08	2.17	1.50	2.67	0.83
Total	15.16	14.42	13.25	20.58	6.92

**Legs.** Tibia I with low proventral distal spur with long curved megaspine; microspur vestigial, associated megaspine long bent slightly at base. Thorn spines on patellae long; 4-5 long setae form comb on prolateral femur III. Preening combs: one weak of two setae on retrolateral metatarsi IV.

**Scopula.** Metatarsi: I, II, thin, in distal 1/3, intermixed with setae; III, two very small triangles of hair in distal 1/6; IV, absent. Tarsi: I, II, full, hairs short, entire, save for few setae on I, and 2 rows on II; III, full, thin, long, divided by



setal band 4-6 wide; IV, like III but each lateral band even narrower than setal band.

**Spines.** Long spine prolaterally on metatarsi I, II. I: fe p1, d4, pa 0, ti p2, v5 + spur, me p2, v1. II: fe p1, d4, pa 0, ti p2, v7, me p3, v2. III: fe p3, d4, r3, pa p7, r2, ti p2, d1, r2, v8, me p4, r4, v9. IV: fe p1, d5, r2, pa 0, ti p3, d2, r4, v9, me p6, r7, v12. Palp: fe p1, d3, pa 0, ti p2, v3.

**Claws.** Two short distal juxtaposed and widely flared rows of 3-4 long teeth (I), 3 short on retro-faces (IV).

**Trichobothria.** Two rows, each of 8-10 for 2/4 of each tibiae; c.6-8 in dorsal line curving to retrolateral proximally on metatarsi; broad band of 15-20 filiform and few small basal clavates on tarsi.

**Spinnerets.** PMS absent, marked by 3-4 distinct 'focused' setae; basal, middle, distal, and total articles of PLS, 0.92, 0.24, 0.12, 1.28, long respectively.

**Palp.** Bulb subpyriform with moderately short embolus and triangular pointed process on face of bulb next to tibia. Retrolateral face of cymbium concave.

#### DISTRIBUTION AND HABITAT

Rainforest at Mt Windsor, west of Mossman, NEQ.

#### REMARKS

*M. anzses* has a paraembolic apophysis, although much smaller, like *M. colemani*. That is taken as their synapomorphy.

**Mandjelia banksi** Raven & Churchill, sp. nov.  
(Figs 2G, 30, 31, 37, Table 3)

#### MATERIAL EXAMINED

**TYPES.** Holotype ♀, Mt Cook National Park, 15°30'S 145°15'E, rainforest at 80m., 15-17 Apr 1990, RR, QMS16449. Paratypes: 1 ♀, same data, QMS16450; ♀, Leo Ck, Coen, 13°33'S 143°28'E, 25 Jul 1976, P. Filewood, QMS1623; 2 ♀♀, Speak Ck, near Mt Molloy, 16°42'S 145°24'E, rainforest at 600m, 3-10 Nov 1975, RR, VTD, QMS1624; 1 ♀, Mt Molloy, 16°41'S 145°20'E, Sep 1969, P. Little, QMS1620; ♀, Black Mt NP, 15°41'S 145°13'E, 4 Nov 1991-20 July 1992, RR, PL, MS, QMS19682; ♀, 'The Hummock', Mt Hedley, 15°44'S, 145°17'E, 250-280m, 12 Nov 1974, D. Joffe, QMS1930. All in NEQ.

#### DIAGNOSIS

Females differ from those of *M. mcrackent* in lacking any posterior median spinnerets and from *M. commoni* in the larger white spots on the abdomen and more setose legs. It differs from *M.*

*anzses* in that the scopula is much more extensive (5/6 vs 1/3) on metatarsi I and elsewhere, the lateral eye ratio is unity, and a rastellar mound is present.

Large spiders, carapace length c.9. 40-60 cuspsules on maxillae. PMS absent. Rastellum a low mound. Preening combs weak. Lateral eye ratio c.1. Scopula in distal 5/6 of metatarsi I, II. Abdomen with herringbone pattern dorsally. **FEMALES.** Basifemoral thorns strong and many on femora I, II, IV, palp and on palpal trochanter. Thorn spines absent. Spermathecae two, each consisting of a pair of broad widely separated ducts with minute mound laterally. Paired claws dentate; palpal claw bare; palpal tarsi aspinose. **MALES.** Unknown.

#### ETYMOLOGY

For Sir Joseph Banks (1743-1820) explorer, botanist, and naturalist who financed and travelled with Captain James Cook in his voyage around the world (1768-1771). The barque 'Endeavour' required repairs and was beached in a sheltered bay near Mt Cook, Cooktown.

#### DESCRIPTION

**HOLOTYPE FEMALE** QMS16449

Carapace 9.13 long, 7.13 wide. Abdomen 10.38 long, 7.50 wide. Total length, 23.

**Colour.** Carapace and legs orange brown, chelicerae red brown. Abdomen dorsally pallid with irregular brown bands forming a herringbone-like pattern; ventrally pallid with paired brown markings at inner edges of anterior and posterior booklungs, an irregular area almost central, and also one in front of spinnerets.

**Carapace.** Uniform cover of fine black hairs, longer and more numerous yellow brown hairs and fine black bristles; striae distinct, narrow, edges overhung by hair. Bristles: 8-10 fine black beside posterior striae; c. 7 anteromedially and few beside caput; 6 long thick and 8-10 finer between PME, and 3 long thick and c. 8 finer between ALE; many long hairs and bristles on lateral margins. Hirsute cuticular shelf extends from anterior edge of coxa III to posterior corner of carapace on each side. Fovea short, procurved; pair of fine black bristles arise from anterior face.

**Eyes.** Group occupies 0.24 of head-width; front width, back width, length, 70:88:72. Back row recurved. MOQ front width, back width, length, 58:61:46. AME:ALE:PME:PLE, 27:27:18:27. Eye interspaces: AME-AME, 0.6; AME-ALE, 0.6; ALE-ALE, 1.0; PME-PLE, 0; PME-PME, 1.3; ALE-PLE 1.0.

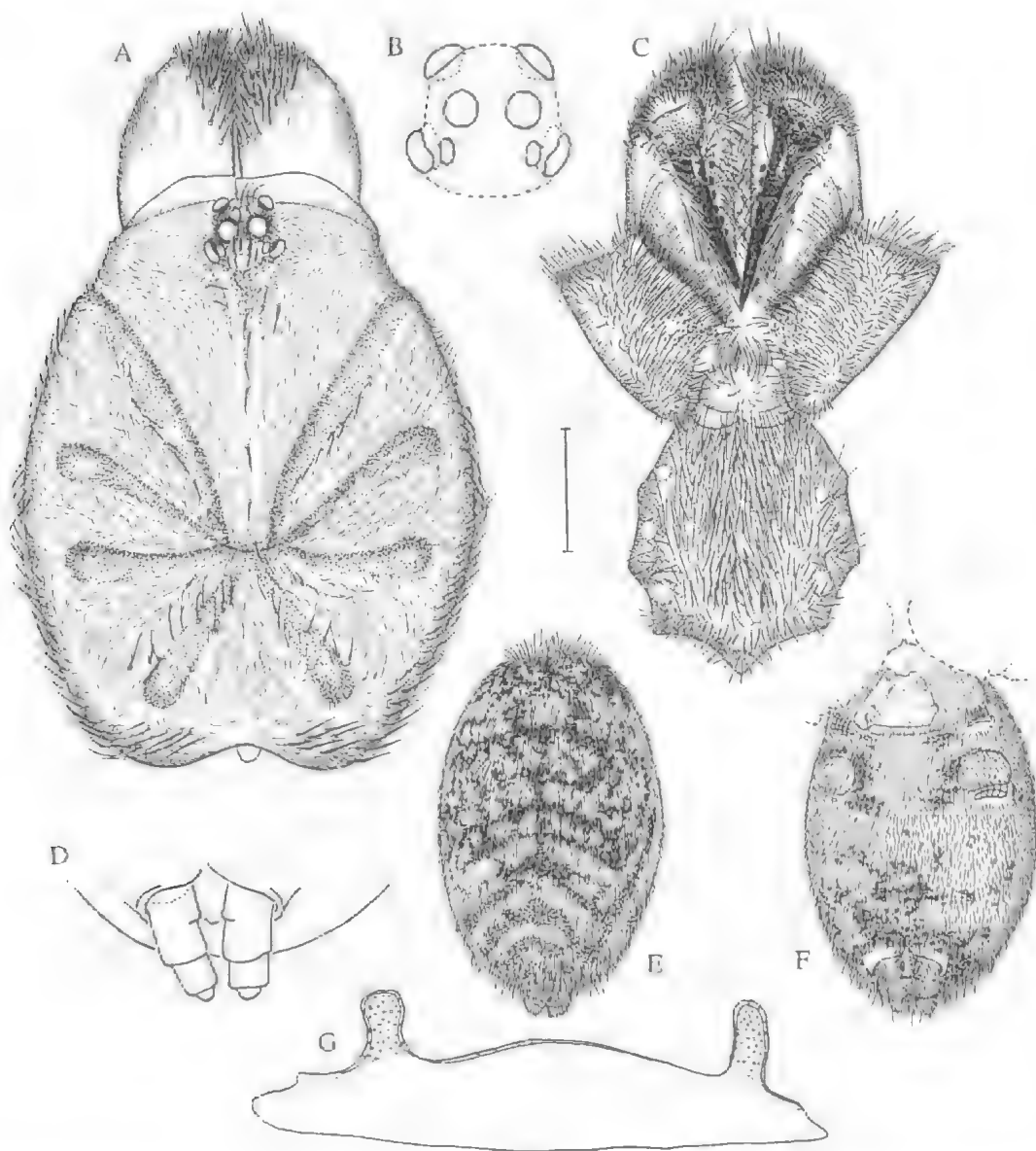


FIG. 37. *Mandjelia banksi* sp. nov., holotype ♀ (QMS16449). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, chelicerae, sternum, maxillae & labium, ventral view; D, spinnerets, ventral view; E, F, abdomen, dorsal (E), ventral view (F); G, spermathecae. Scale line = 4mm (E, F); 2mm (A, C, D); 1mm (B), 0.25mm (G).

**Chelicerae.** Uniform cover of short fine brown hairs, a band of thick erect black bristles prodorsally, laterally only short brown hairs. Rastellum a low mound with many short curved black bristles. Furrow promargin with 9 thick spaced teeth, basomesally with c. 15 small teeth.

**Labium.** 1.67 wide, 0.76 long; long, with many fine bristles over entire surface; ridge not distinct. Labiosternal suture two shallow large sigilla joined medially.

**Maxillae.** 2.58 long in front, 3.72 long behind, 1.52 wide; with c.42-55 cuspules on low mound

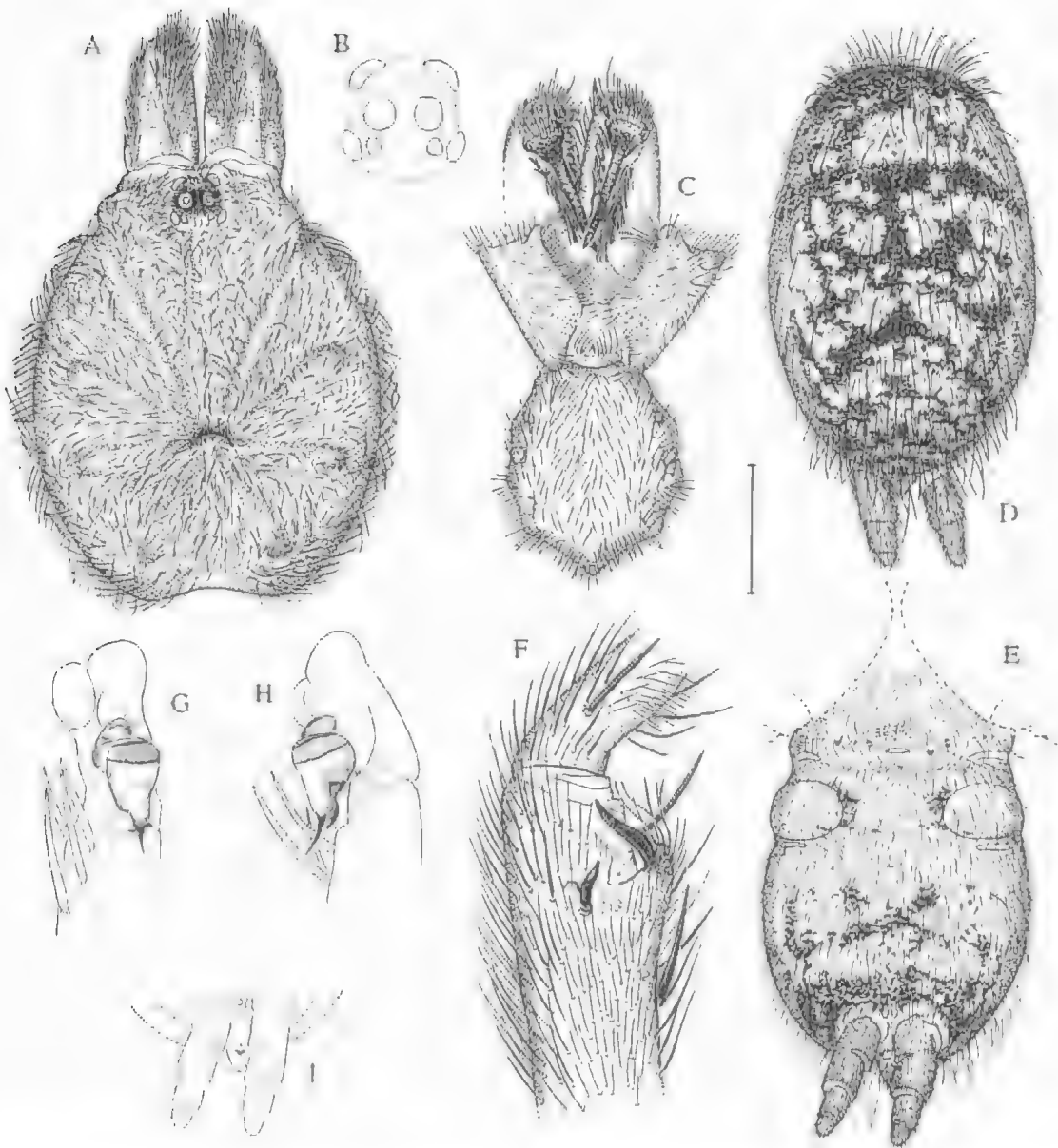


FIG. 38. *Mandjelia colemani* sp. nov., holotype ♂ (QMS14768). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, chelicerae, sternum, maxillae & labium, ventral view; D, E, abdomen, dorsal view (D), ventral view (E); F, tibia & metatarsus I, prolateral view; G, H, palpal bulb, ventral (G), retrolateral view (H); I, spinnerets, ventral view. Scale line = 2mm (A, C-E, I); 1mm (B, F); 0.5mm (G, H).

in inner angle. Heel distinct, angular; anterior lobe, indistinct.

**Sternum.** 4.64 long, 3.79 wide; margins hirsute. Sigilla: posterior, oval, marginal; other, subcircular, marginal.

**Legs.** Inner ventral edges of coxae I-III acute. Basifemoral thorns (8-15) on I, II, IV, also on basal palpal femora and palpal trochanter. Lateral femora I-IV with light pile of golden brown hairs. Distal patellae and proximal metatarsi III, IV with comb of short, fine black setae on edge. Thorn

spines absent. Preening combs: no true comb present, only two separated setae.

	I	II	III	IV	Palp
Femur	6.56	5.75	5.44	7.19	4.81
Patella	4.25	3.81	3.25	3.81	2.68
Tibia	4.56	3.94	3.31	5.63	2.88
Metatarsus	3.50	3.44	4.06	6.75	—
Tarsus	1.88	1.75	2.06	2.31	2.38
Total	20.75	18.69	18.12	25.69	12.75

**Scopula.** Metatarsi: I, II, in distal 5/6, moderately short, dense, entire; III, in distal 1/3, two narrow bands parted by setal band 4-6 wide; IV, like III, in distal 1/4, scopula bands narrower. Tarsi: I, II, full, dense, entire save for line of setae, not parting; III, divided by setal band 3-4 wide becoming wider distally; IV, divided by setal band 8-10 wide for its length.

**Spines.** I: fe p1 d5w, pa 0, ti p2w, v5, me v2. II: fe p2, d5w, pa p2w, ti p2w, v2, me v3. III: fe p1, d4w, r3, pa p3, r2, ti p2, r2, v9, me p4, r4, v9. IV: fe p1, d5w, r1, pa r1, v1, ti p2, r5, v10, me p4, r4, v11. Palp: fe p1, d5w, pa 0, ti p2, v4.

**Claws.** 2 small teeth on paired claws medially, palpal claw slightly smaller than tufts, bare.

**Trichobothria.** Two rows, each of 8 for 2/3 of tibiae; c. 13 on metatarsi in straight but diagonal row; c. 24 filiform and 3-5 small clavate on tarsi.

**Spermathecae.** Two, each consisting of a pair of broad widely separated ducts with minute mound laterally.

**Spinnerets.** PMS absent, save for one clump of sessile setae. PLS length of basal, middle, apical, and total articles 1.36, 0.42, 0.21, 1.99, respectively.

#### DISTRIBUTION, ECOLOGY, HABITAT & BURROW

From the type locality, Mt Cook, near Cooktown south along the coast to Mt Hedley and inland along the range to Mt Molloy. Mt Cook is an area of low rainforest and open eucalypt forest at altitudes from just above sea-level 80m to 150m. A thorough search (by RJR) at Keatings Gap on the western slopes of Mt Cook and on the summit of Mt Cook in 1975 yielded no material of this species. The types were taken 15 years later at the same locality at Keatings Gap and were extremely common, especially in bank cuttings but also under logs and rocks. Over 100 burrows were examined. Each burrow is horizontal and extends back into the earth up to 10 cm. Entrances are closed by two soft, wafer-thin doors hinged at the top and covered lightly with soil and moss. Each door is about 1-1.5cm in diameter and they are separated by up to 5 diameters. They are usually at the same height above the ground. The space in the 'Y' formed by

the tubes is filled with loose soil. Arms of the Y and the area just behind their junction is about twice the diameter of the remaining burrow, from 4-20 cm long. Walls of the burrow are covered with a thin translucent layer of silk for its length. On finding the doors of one burrow removed, the spider immediately began webbing up the opening. About two-thirds of the distance down the shaft, a short flask-like side shaft with a thick plug door arises. The spider is usually found within the flask.

#### MYGALOMORPHS SYMPATRIC

Mt Cook: *Zophorame simoni* Raven (Barychelidae), *Conothele* sp. (Ctenizidae), *Cethegus pallipes* Raven (Dipluridae), *Phlogiellus* sp. (Theraphosidae)

#### REMARKS

A ♀ had eggs in a translucent white case, each egg was c. 1.6mm in diameter and c. 60-80 eggs are in the sac.

**Mandjelia colemani** Raven & Churchill, sp. nov.  
(Figs 31, 38, Table 4)

#### MATERIAL EXAMINED

TYPE. Holotype ♂, Davies Creek National Park, 16°55'S 145°33'E, NEQ, in bank just above concrete pipe, in sandy granite-derived soil, collected 30 Aug 1988, matured in captivity, Dec 1989, TBC, QMS14768

#### DIAGNOSIS

Males differ from those of *M. anzsas* in the larger size of the paraembolic process and in having posterior median spinnerets.

Medium-sized, carapace length c. 7. c. 42 cuspules on maxillae. PMS present, distinct, Rastellum absent. Thorn spines and preening combs absent. Lateral eye ratio c. 1. Scopula in distal 3/4-1/2 of metatarsi I, II, respectively. Abdomen with pallid with small brown areas defining large white spots. MALES. Tibia I with distal spur and long megaspine; upper megaspine curved, much longer than wide; microspur rectangular c. 1.5 times wider than long; bulb unique, with distinct pointed paraembolic apophysis. Retrolateral face of cymbium concave. Claws with two rows of teeth on leg I, IV. FEMALES. Unknown.

#### ETYMOLOGY

For the late N. Clyde Coleman, a fine naturalist and arachnologist of north Queensland who made extensive collections from the type locality.

## DESCRIPTION

## HOLOTYPE MALE QMS14768

Carapace 7.06 long, 5.81 wide. Abdomen 6.56 long, 5.25 wide. Total length, 15.

**Colour.** Carapace orange-brown cuticle obscured by light brown hair, chelicerae and legs yellow-brown. Abdomen dorsally pallid with small irregular brown areas defining large anterior pallid oval area behind which are two large paired irregular areas and two pallid chevrons, ventrally pallid with brown marks on inner edge of posterior book-lung covers, around spinnerets a brown collar and irregular broken brown patches in posterior half.

**Carapace.** Uniform cover of fine brown hair obscuring cuticle and mixed sparsely with fine short black setae; margins with dense brown bush and long curved black bristles crisscross at mid-point and in anterior 1/3. Fovea short, straight. Bristles: a pair arise deep in fovea, 3-4 fine pairs anteriorly; line of 8-10 thick black anteromedially; 6 long thick between ALE; 7 smaller between PME; line of black on anterior margin. Anterior striae distinct, wide, glabrous; others indistinct, covered by overhanging hair.

**Eyes.** Group occupies 0.29 of head-width; front width: back width: length, 35:39:33, MOQ front width: back width: length, 26:27:22. AME:ALE:PME:PLE, 14:14:8:11. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.6; ALE-PLE, 0.9; PME-PME, 1.0; PME-PLE, 0.1; ALE-ALE, 0.9.

**Chelicerae.** Prodorsally with many long black bristles mixed with brush of brown hair. Rastellum absent, distal edge with many long thick curved black bristles. Furrow promargin with 8 thick and 2 small separated teeth, basomesally with 2 small teeth. Intercheliceral tumescence absent.

**Labium.** 0.40 long, 1.32 wide; short with 5 thicker setae just behind ridge. Labiosternal suture two large separate oval sigilla.

**Maxillae.** 1.92 long in front, 2.60 long behind, 1.04 wide; c.42 pointed cusps in inner angle; heel distinct, angular; cuspules distinct.

**Sternum.** 3.40 long, 3.08 wide. Sigilla all oval, small, submarginal.

**Legs.** Setae mixed with pile of brown hairs, especially on femora, Tibia I with distal conical spur with moderately long megaspine above which cuticle is pallid and unsclerotised; upper megaspine slightly curved, much longer than wide and set against rectangular microspur c.1.5 times longer than wide. Thorn spines and preening combs absent.

	I	II	III	IV	Palp
Femur	5.63	5.13	4.75	6.44	3.31
Patella	3.44	3.00	2.56	3.00	1.75
Tibia	4.19	3.88	3.38	5.38	2.19
Metatarsus	4.06	3.75	4.31	6.56	—
Tarsus	2.19	2.06	2.06	2.44	1.19
Total	19.51	17.82	17.06	23.82	8.44

**Scopula.** Metatarsi: from 1/2 (II) to distal 3/4 (I), moderately dense, divided by setal band 1-2 wide; III, two scopula bands in distal 1/3, prolateral the wider; IV, two small groups of hair in distal 1/8. Tarsi: I, II, full, dense, entire, save for setal band 1-2 wide; III, dense, divided by setal band 3-4 wide; IV, similar, setal band 4-6 wide.

**Spines.** I: fe p1, d6, pa 0, ti p1, v2 + megaspines, me p4, v2. II: fe p1, d5, pa 0, ti p2, v7, me p3, v2. III: fe p3, d5, r2, pa p4, r1, ti p3, r3, v9, me p5, r5, v10. IV: fe p1, d5, r2, pa r1, v1, ti p3, r5, v10, me p6, r7, v11. Palp: fe p1, d4, pa 0, ti p3, v4.

**Claws.** Two short scooped rows each of 8 (I), to 2 (inner) and 4 (outer) in each of two short rows on IV.

**Trichobothria.** Two rows, each of c. 12 for 3/4 of each tibiae; c.18 on metatarsi in straight but diagonal row; c.4 clavate (proximally) and 18 filiform on tarsi.

**Palp.** Bulb pyriform; embolus with distally broad but short keel and distinct pointed paraembolic apophysis directed diagonally and downward. Retrolateral face of cymbium concave.

**Spinnerets.** PMS 0.20 long, 0.08 wide, 0.10 apart, and c. 0.07 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.25, 0.45, 0.38, 2.08, long, respectively.

## DISTRIBUTION &amp; HABITAT

Davies Creek National Park, Atherton Tableland, NEQ. The ♂ was taken as a juvenile from sandy granitic soil near roadside heath. Burrow unknown.

**Mandjelia commoni** Raven & Churchill, sp. nov.  
(Figs 5B, 6B, 31, 32, 39, 40, Table 3)

## MATERIAL EXAMINED

**Types.** Holotype ♂, Majors Mtn, pitfall traps, 17°38'S, 145°32'E, 14-20 Apr 1978, RR, VTD, QMS1634; ♂, same data, QMS1635; ♀, allotype, along Millaa Millaa Rd from Innisfail, 17°35'S 146°35'E, 15 Aug 1974, W. Nash, QMS1638; ♀, Boonjee Scrub, 17°24'S, 145°44'E, 4 Apr 1978, JC, KRM, QMS19691; 2 ♀♀, Speak Ck, near Mt Molloy, 16°42'S 145°24'E, 3-10 Nov 1975, RR, VTD, QMS1921; Cairns area [no specific location given], 'rainforest', Nov 1980, A. Williamson,

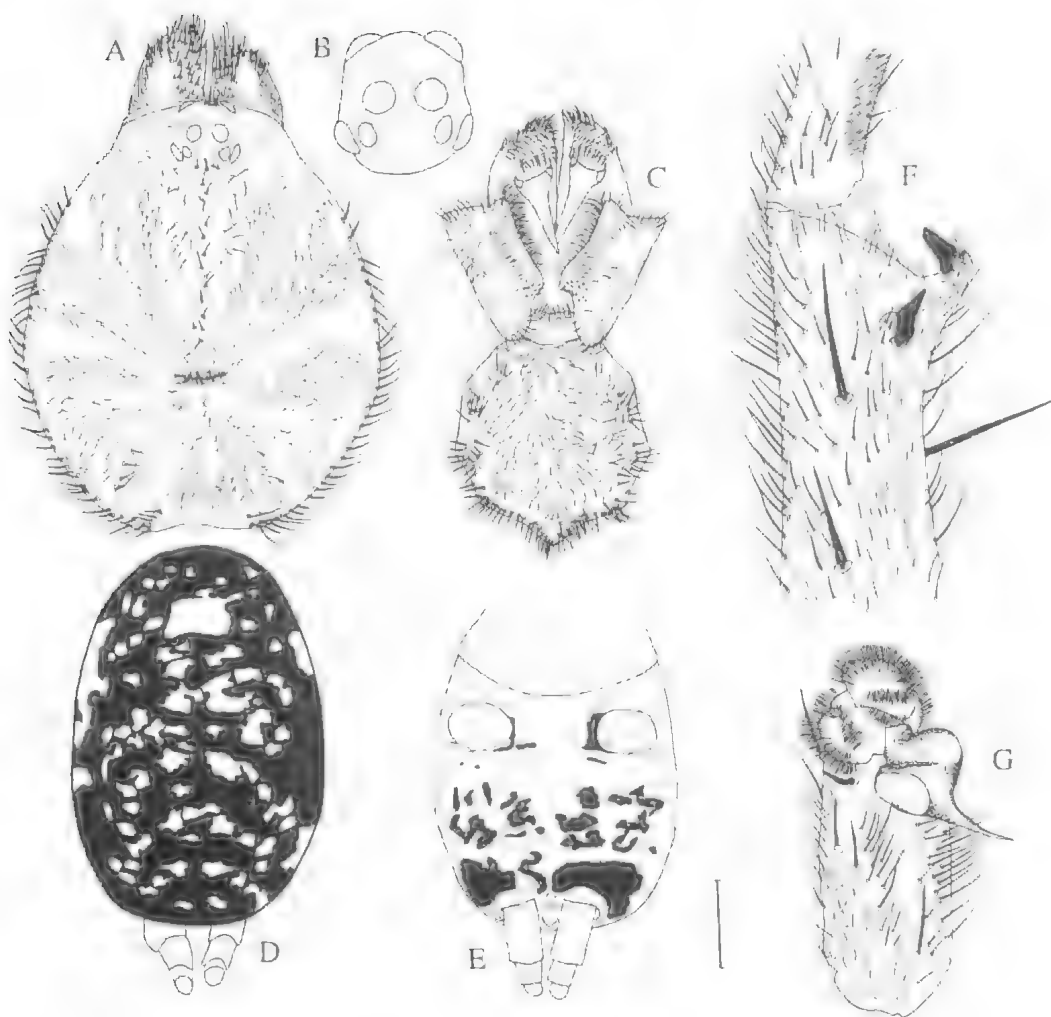


FIG. 39. *Mandjelia commoni* sp. nov., holotype ♂ (QMS1634). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, chelicerae, sternum, maxillae & labium, ventral view; D, E, abdomen, dorsal (D), ventral view (E); F, tibia & metatarsus I, prolateral view; G, cymbium & palpal bulb, ventral view. Scale line = 1 mm (A, C-E); 0.5 mm (B, F, G).

QMS1923; ♀, Mt Molloy, 16°42'S, 145°24'E, F. Little, QMS1924; ♀, Mt Edith, Lamb Range, 17°06'S 145°37'E, rainforest at 1000m, 12 Oct 1982, GBM, DY, GT, QMS1925; ♀, Upper Boulder Ck, 11km NNW Tully, 17°50'S 145°54'E, rainforest at 850m, 16-19 Nov 1984, DC, GBM, GT, QMS1926; ♀, White Rock Mt, 17°01'S 145°45'E, 8 Jan 1975, W. Nash, QMS1928; ♀, Granite Ck, 15°45'S 145°21'E, 25 Oct 1974, JC, T. Tebble, VTD, QMS1929; ♂, Gayundah Ck, Hinchinbrook Is, pitfall traps, 18°22'S, 146°13'E, rainforest at 10m, 8-18 Nov 1984, GBM, GT, DC, QMS1931; ♀, same data but, 7-15 Nov 1984, QMS1932; ♀, same data but campsite, 14-20 Nov

1984, VTD, JAG, QMS1979; 1 ♂, Mt Macalister, Cardwell Ra, 18°19'S 145°50'E, pitfall traps in rainforest at 850m, 18 Dec 1986-14 Jan 1987, GBM, GT, S. Hamlet, QMS6831; ♀, Licuala State Forest, 17°55'S 146°02'E, 15 May 1991, KW, P. Stumkat, QMS19542; ♀, Edmonton, 17°01'S 145°45'E, with egg sac (R.Mascord No.1194), 6 Aug 1978, R. Mascord, AM KS 13993; 3 ♀♀, Bakers Blue Mt, 16°39'S 145°07'E, 30 Dec 1989-9 Jan 1990, ANZSES Expedition, QMS19692. All in NEQ.

OTHER MATERIAL EXAMINED. The types and 2 juv., same data as S1921, QMS1922; juv., 22 km. SE Mareeba, 900m altitude, 4 Nov 1983, DY, GT,



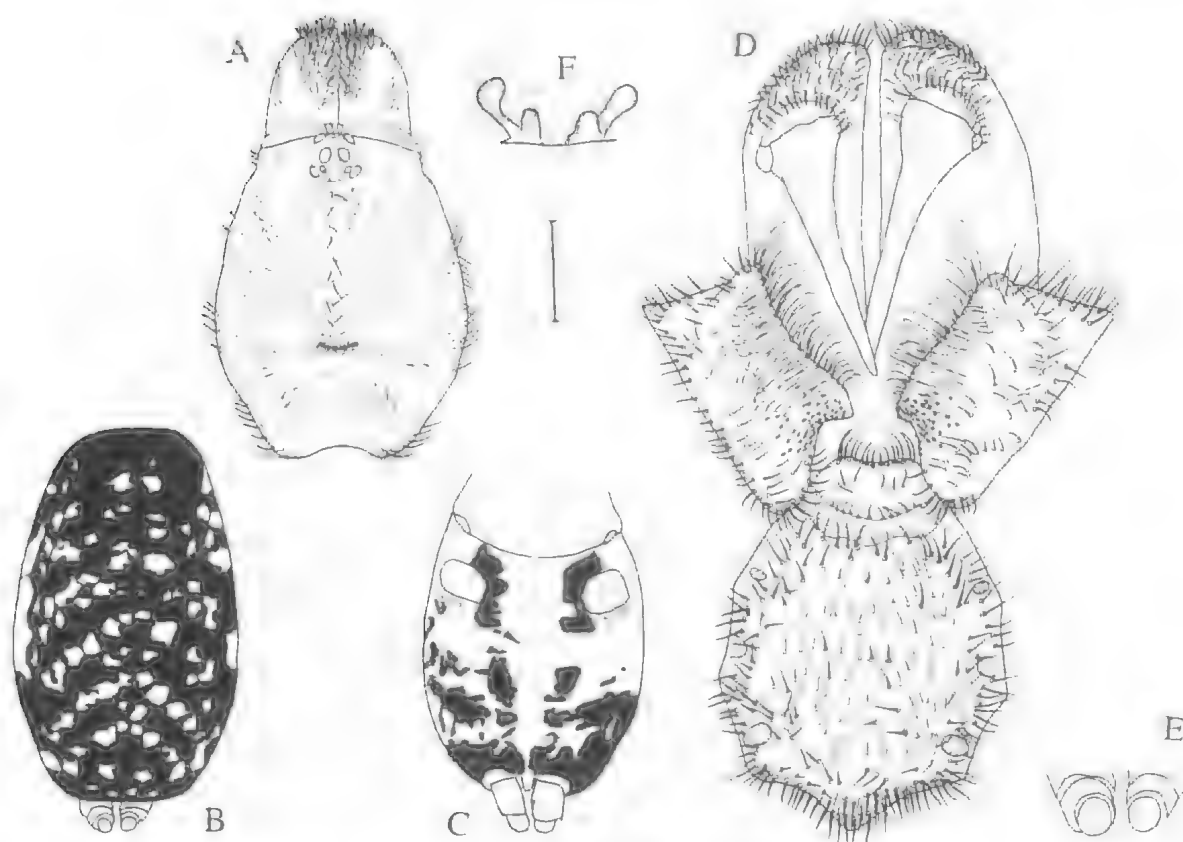


FIG. 40. *Mandjelia comuni* sp. nov., allotype ♀ (QMS1638). A. carapace & chelicerae, dorsal view; B. C. abdomen, dorsal (B), ventral (C); D. sternum, maxillae, labium & chelicerae, ventral view; E. spinnerets; F. spermathecae. Scale line = 2mm (A-C); 1mm (D, E); 0.5mm (F).

QMS1985; juv., Majors Mt, 1100m altitude, sieved litter, 4 May 1983, GBM, QMS1987. Gayundah Ck, Hinchinbrook Is.: juv., 6-18 Nov 1984, QMS1981; juv., from sieved litter, 8 Nov 1984, VTD, JAG. QMS1982; 2 juv., from flight intercept trap, 8-15 Nov 1984, GBM, GT, QMS1983; 1 ♀, 6 juv., Chillagoe caves, 17°09'S 144°29'E, Explorers Club Expedition, Jul 1982, QMS19549. All in NEQ.

#### ETYMOLOGY

For Dr Ian F.B. Common, formerly of C.S.I.R.O., in small recognition of his detailed and extensive contributions to lepidopteran science and natural history in Australia.

#### DIAGNOSIS

Differs from *M. brassi* by the distal, rather than subdistal, position of the tibial spur and ♀♀ in the 4-lobed spermathecae and from *M. oenpelli* in the wider sternum, fewer maxillary cuspules and ♀ palpal claw as high as tufts. Males of *M.*

*comuni* differ from those of *M. anzsles* in the shorter palpal bulb that lacks any triangular process near the embolic constriction; ♀♀ probably (not known for *M. anzsles*) differ in the predominance of brown rather than pallid areas on the dorsal abdomen and by the separated four spermathecal lobes.

Medium-sized, carapace length c.5-7. 12-50 cuspules on maxillae. PMS absent. Rastellum weak to absent. Preening combs present. Lateral eye ratio 1.1-1.3. Scopula for length of metatarsi I, II. Abdomen dorsally maculate. FEMALES. Basifemoral thorns few, only on IV. Thorn spines on patellae. Scopula weak to absent on metatarsi IV. Spermathecae of four lobes, each pair about their basal width apart; outer much longer, inner broader basally. Paired claws dentate; palpal claw large, bare; palpal tarsi aspinose. MALES. Tibia I with two curved megaspines, one straight on lower slightly curved proventral conical spur, the upper slightly angular with distinct triangular

microspur dorsally. Bulb pyriform gradually tapering to an acuminate embolus. Claws with two rows of few teeth on legs I, IV.

#### DESCRIPTION

##### HOLOTYPE MALE QMS1634

Carapace 4.80 long, 4.00 wide. Abdomen 4.24 long, 2.80 wide. Total length, 10.

*Colour.* Carapace, chelicerae, and legs yellow brown. Abdomen brown dorsally with pale anterior patch and mottled lines extending laterally, anteriorly with patch of long, thick, brown bristles; ventrally pallid with large brown mottling in front of spinnerets.

*Carapace.* Bristles: uniform cover of short, brown bristles; long, stronger medially and lining lateral posterior striae and few along anterior edge of fovea and between AME. Fovea short, slightly procurved.

*Eyes.* Group is 0.40 of headwidth; group front width, back width, length, 33:39:34; back row slightly recurved; ratio of AME:ALE:PME:PLE, 9:12:9:11; MOQ front width, back width, length, 24:27:19. Eye interspaces: AME-AME, 0.6; AME-ALE, 0.8; ALE-ALE, 1.3; ALE-PLE, 1.7; PME-PLE, 0.1; PME-PME, 1.7.

*Chelicerae.* Short, strong setal band dorsally. Rastellum absent. Furrow promargin with 7 teeth, basomesally without teeth.

*Labium.* 0.92 wide, 0.40 long; short, few setae medially on transverse ridge. Labiosternal suture a broad shallow groove.

*Maxillae.* 1.16 long in front, 1.64 long behind, 0.76 wide; with c.12-22 (22-32 in QMS1635) cuspules in inner angle; anterior lobe acute distinct; heel produced angular.

*Sternum.* 2.20 long, 2.16 wide; all sigilla small, oval, marginal; lateral margins hirsute.

*Legs.* Tibia I with two curved megaspines, one straight on lower slightly curved proventral conical spur, the upper slightly angular with distinct triangular microspur dorsally. Thorn spines absent. Preening combs: 1 of 2 setae on retro metatarsi IV.

	I	II	III	IV	Palp
Femur	3.42	3.58	3.29	4.42	2.08
Patella	2.29	1.88	1.58	1.92	1.29
Tibia	2.67	2.67	2.33	3.92	1.63
Metatarsus	2.58	2.50	2.58	4.58	-
Tarsus	1.63	1.67	1.63	2.17	0.83
Total	12.59	12.30	11.41	17.01	5.83

*Scopula.* Short, thin but entire for full tarsi I, II; divided by 2-4 rows on tarsi III, IV; short, very thin, entire for 1/2-2/3 on metatarsi I, II; divided and for distal 1/4 on metatarsi III; few scattered hairs on metatarsi IV.

*Spines.* I: fe p1, d4, pa 0, ti p2, v4 + megaspine, me p1, v1. II: fe p1, d4, r1, pa 0, ti p1, v7, me p1, v2. III: fe p2, d3, r3, pa p3, r1, ti p4, r3, v8, me p4, r5, v9. IV: fe p2, d5, r2, pa r1, v2, ti p4, r5, v9, me p5, r5, v4. Palp: fe p1, d2, pa 0, ti p1, v3.

*Claws.* Two rows of 4 long teeth in ectal and 7 in ental rows (I); 3 in ectal and 2 in ental row (IV); all project well above tufts.

*Trichobothria.* Two rows, each of c.10 for almost full tibiae; c.10 in curving row on metatarsi; 2 clavate and c.15 filiform on tarsi.

*Palp.* Bulb pyriform gradually tapering to an acuminate embolus. Cymbium distinctly incised.

*Spinnerets.* PMS absent, position marked by small group of thicker setae. Basal, middle, apical, and total articles of PLS 0.68, 0.20, 0.12, 0.92 long, respectively.

##### ALLOTYPE FEMALE QMS1638

Carapace 6.54 long, 5.08 wide. Abdomen 7.50 long, 4.58 wide. Total length, 17.

*Colour.* Carapace, chelicerae, and legs orange brown. Abdomen dorsally dark brown with 30-40 large white areas; ventrally pallid with brown markings medially, posteriorly, and laterally.

*Carapace.* Bristles: uniformly covered with fine brown and golden brown hairs; 3 thick between ALE, 2 between PME; 6-8 anteromedially; a pair of weak foveal. Fovea short, procurved.

*Eyes.* Group occupies 0.25 of headwidth; group front width, back width, length, 41:50:45; back row recurved; ratio of AME:ALE:PME:PLE, 12:16:9:13; MOQ front width, back width, length, 28:33:24. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.8; ALE-ALE, 1.3; ALE-PLE, 1.4; PME-PLE, 0.1; PME-PME, 1.7.

*Chelicerae.* With short brown bristles dorsally. Rastellum, a line of 8-10 short thick curved spine-like bristles overhang fang edge and just above them. Furrow promargin with 9 teeth, basomesally with 4 small teeth and 15-20 fine granules.

*Labium.* 1.20 wide, 0.56 long; group of 5 thicker setae just behind low ridge and few finer setae behind those; separated from sternum by broad groove including two sigilla.

*Maxillae.* 1.72 long in front, 2.52 long behind, 1.24 wide; with c.40-50 cuspules in widely spaced semicircular area on low mound; heel produced, rounded; anterior lobe broad, indistinct.

*Sternum.* 3.25 long, 2.91 wide; posterior sigilla oval, distinct, others small, marginal, indistinct.

*Legs.* 4123. Legs I, II marginally thicker than III, IV. 3 basifemoral thorns on IV. 3 thorn spines on patellae III. Setae distally on prolateral femora

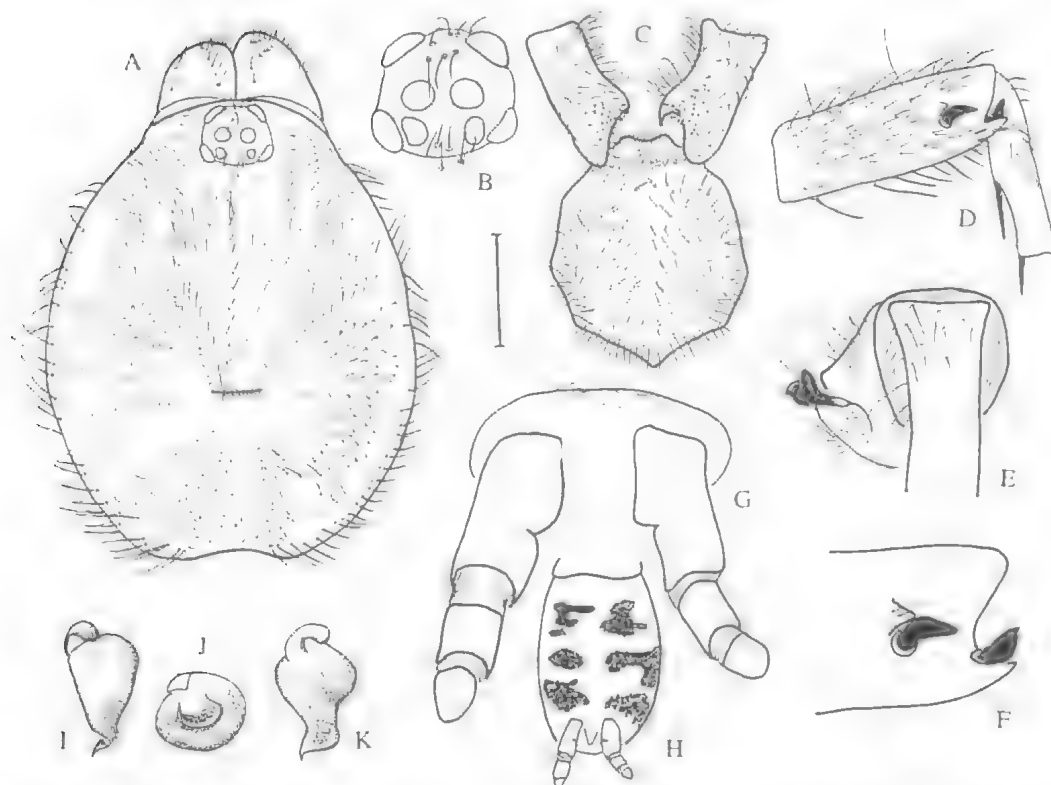


FIG. 41. *Mundjelta exasperans* sp. nov., holotype ♂ (QMS19058). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, sternum, maxillae & labium, ventral view; D-F, tibia & metatarsus I, prolateral view (D), anterior view (E), retrolateral view (F); G, spinnerets, ventral view; H, abdomen, ventral view; I-K, palpal bulb, ventral (I), axial (J) & prolateral views (K). Scale line = 1mm (A, C); 0.5mm (B, D-G, I-K); 2mm (H).

III form distinct comb, weaker comb on femora IV. Preening combs: 1 of 4 strong setae on retroventral III, IV.

	I	II	III	IV	Palp
Femur	4.00	3.83	3.08	5.00	3.33
Patella	3.08	2.75	2.50	2.67	2.08
Tibia	2.83	2.50	2.00	3.50	1.92
Metatarsus	2.25	2.08	2.75	4.92	-
Tarsus	1.54	1.50	1.42	2.42	1.75
Total	13.70	12.66	11.75	18.51	9.08

**Scopula.** Metatarsi, tarsi I, II, thin, full, divided by line of setae; tarsi III and IV, divided by 3-5 rows of setae; metatarsi III, scattered hairs distally; metatarsi IV, absent.

**Spines.** I: fe p1, d5 weak, pa 0, ti v3, me v2. II: fe p1, d5 weak, pa 0, ti p1, v2, me v2. III: fe d4w, r1, pa p4, r1, ti p2, r2, v8, me p4, r2, v10. IV: fe d4 weak, r1, pa r1, ti p1, r2, v10, me p3, r4, v13. Palp: fe p1, d2, ti v7.

**Claws.** 2 teeth on outer faces on leg I, medially on IV; palpal claw large, evident above tufts, bare.

**Trichobothria.** Two rows, each of 9 on tibiae for proximal 2/3; c.11 in gently curving row on

metatarsi; 5 short basal clavate and 10-12 long filiform in two rows on tarsi.

**Spermathecae.** Four lobes, each pair about their basal width apart; outer longer, inner broader basally.

**Spinnerets.** PMS absent. Basal, middle, apical, total length of PLS 0.64, 0.20, 0.12, 1.04 long, respectively.

#### DISTRIBUTION & HABITAT

Rainforest at Majors Mountain National Park, Boonjee Scrub, Spear Ck near Mt Molloy, the Lamb Range, Hinchinbrook Is, and Upper Boulder Creek, near Tully; all in NEQ.

#### REMARKS

The number of cuspsules on the ♂ holotype is the lowest of the species.

**Mandjelia exasperans** Raven & Churchill,  
sp. nov.  
(Figs 32, 41, Table 3)

**MATERIAL EXAMINED**

TYPE. Holotype ♂, Mt Halifax, 19°07'S 146°23'E, NEQ, pitfall traps from summit and open heath, AG, 20 Mar 1991, QMS19058.

**DIAGNOSIS**

Males differ from those of all other species by the relatively large and heavy tibial spur and megaspines which project prolaterally in association with keeled bulb.

PMS absent. c.32-39 cuspules on maxillae. Rastellum absent; preening combs present. MALES. Tibia I with short stout spur projecting from prolateral face, megaspine stout leaf-like; microspur large, triangular set against stout curved megaspine just above line of main spur. Thorn spines absent. Bulb moderately large, with flattened embolus flanked by two distinct opposed keels; embolus slender acute; retrolateral face of cymbium concave; palpal tibia with two large long spines distally on proventral corner. 4-5 teeth in each of two rows on claws of leg I, one row on outer face of claws on IV. FEMALES. Unknown.

**ETYMOLOGY**

The specific epithet conveys my feelings when on trying to complete the manuscript yet another new species of this diverse genus was found.

**DESCRIPTION**

**HOLOTYPE MALE QMS19058**

Carapace 3.88 long, 3.19 wide, Abdomen 3.63 long, 2.19 wide. Total length, 8.

**Colour.** Carapace, chelicerae, and legs yellow brown, not annulated. Abdomen dorsally ruptured, mostly brown with white mottling; ventrally pallid with several darker areas. Eyes, save PLE, radiant blue.

**Carapace.** Pilosity: light uniform cover of gray hairs and black bristles; striae indistinct, shallow. Bristles: 5 erect black beside posterior striae; c. 15 anteromedially and 10-12 in band beside caput; 3 long thick and 8-10 finer between PME, and 4 long thick and 5-7 finer between ALE; few long hairs and band of long curved bristles on lateral margins. Fovea straight.

**Eyes.** Tubercle low. Group occupies 0.33 of head-width; front width, back width, length, 36:42:33, respectively. Back row straight. MOQ front width, back width, length, 25:26:22, respectively. AME:ALE:PME:PLE, 12:13:9:12. Eye

interspaces: AME-AME, 0.3; AME-ALE, 0.6; ALE-ALE, 1.2; PME-PLE, 0.1; PME-PME, 0.9; ALE-PLE 0.9.

**Chelicerae.** Small, with broad band of long bristles prodorsally, laterally narrow band of short bristles. Rastellum entirely absent. Intercheliceral tumescence absent. Furrow promargin with 7 small, widely spaced teeth, basomesally with 3-4 fine granules.

**Labium.** 0.19 long, 0.63 wide. Labiosternal suture a narrow continuous groove.

**Maxillae.** 0.94 long in front, 1.31 long behind, 5.53 wide; with 32-39 blunt spaced cuspules in inner angle. Heel produced, distinct; anterior lobe, small, triangular.

**Sternum.** 1.91 long, 1.75 wide. Sigilla all small, oval, marginal.

**Legs.** Tibia I with short stout spur projecting from prolateral face, megaspine stout leaf-like; microspur large, triangular set against stout curved megaspine just above line of main spur. Basilemoral thorns and thorn spines absent. Preening combs: I of 2-3 setae on retroventral III, IV.

	I	II	III	IV	Palp
Femur	2.75	2.50	2.38	3.38	1.88
Patella	1.72	1.41	1.44	1.66	1.13
Tibia	1.97	1.78	1.47	2.63	1.25
Metatarsus	1.75	1.63	1.94	3.34	-
Tarsus	1.25	1.13	1.06	1.41	0.78
Total	9.44	8.45	8.29	12.42	5.04

**Scopula.** Metatarsi: I, hairs long, sparse in distal 1/3; II-IV, absent. Tarsi: I, II, hairs long, full, thin, entire save for band of 2-3 setae wide; III, IV, sparse, widely divided by setal band 2 (III)-3 (IV) times width of each scopula band.

**Spines.** I: fe p1, d5, pa 0, ti p1+ megaspine, v4 + megaspine, me v2, 1 very long basal. II: fe p1, d4, pa 0, ti p2, v5, me p1, v3. III: fe p1, d3, r3, pa p3, r1, ti p1, r3, v9, me p3, r4, v9. IV: fe d4, r2, pa r1, v1, ti p3, r3, v10, me p6, r7, v12. Palp: fe p1, d3, pa 0, ti p1, v3.

**Claws.** 4-5 teeth in each of two parallel rows on leg I, 2-3 on outer face only on IV.

**Trichobothria.** Two rows, each of c. 7 for length of tibiae; c. 12 on metatarsi in curving row; c.4 small clavate and c.10 filiform on tarsi.

**Palp.** Bulb moderately large, pyriform tapering gradually to flattened embolus flanked by two distinct opposed keels; embolus slender acute; retrolateral face of cymbium concave. Tibia with two large long spines distally on proventral corner.

**Spinnerets.** PMS absent. PLS length of basal, middle, apical, and total articles 0.59, 0.23, 0.19, 1.01 long, respectively.

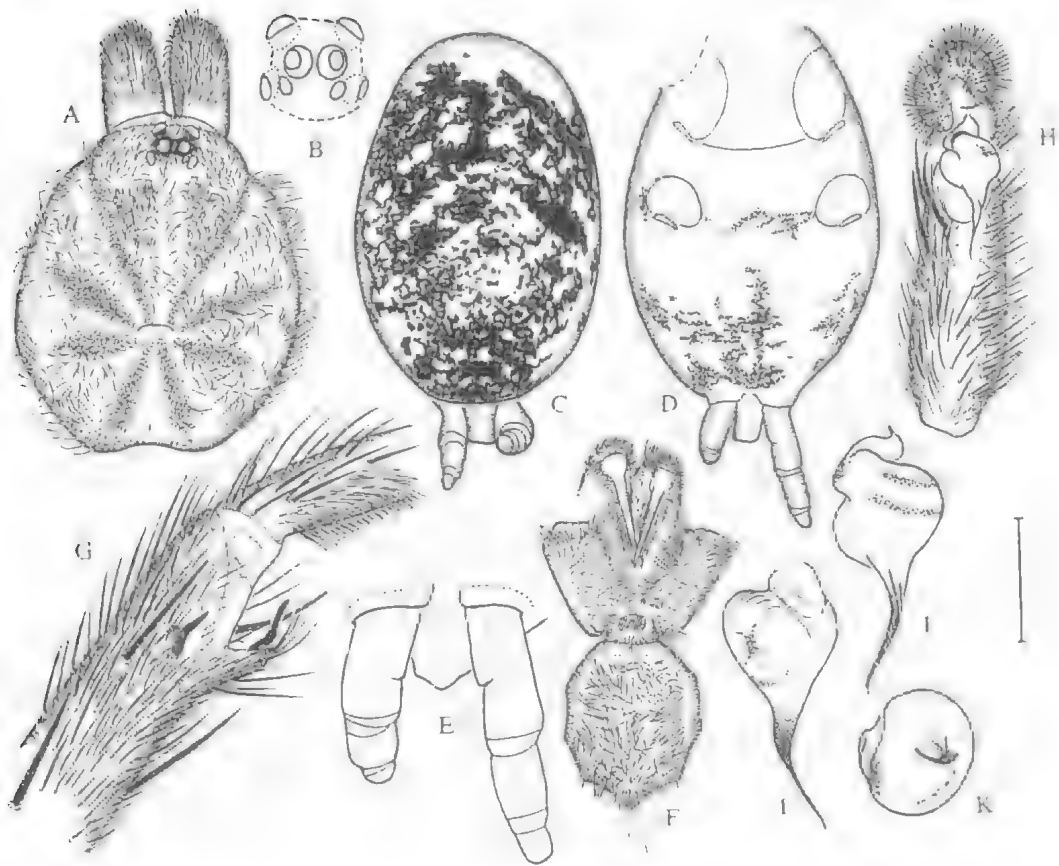


FIG. 42. *Mandjelia fleckeri* sp. nov., holotype ♂ (QMS17840). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, D, abdomen, dorsal view (C), ventral view (D); E, spinnerets, ventral view; F, chelicerae, sternum, maxillae & labium, ventral view; G, tibia & metatarsus I, prolateral view; H, cymbium & palpal bulb, ventral view; I-K, palpal bulb, prolateral (I), ventral (J) & axial view (K). Scale line = 2mm (A, C, D, F); 1mm (B, E, G, H); 0.5mm (I, J, K).

#### DISTRIBUTION AND HABITAT

Mt Halifax, taken from pitfall traps set in heath and open forest on the summit, north Queensland.

***Mandjelia fleckeri*** Raven & Churchill, sp. nov.  
(Figs 6C, 32, 42, 43, Table 3)

#### MATERIAL EXAMINED

**Types.** Holotype ♂, Mt Cleveland, 19°15'14-32"S 147°01'40"-02°E, NEQ, summit, altitude 500m, GBM, DC, 22-24 Mar 1991, QMS17840; two ♀ paratypes, same data, QMS17851 (allotype), QMS17852.

#### DIAGNOSIS

Males differ from those of *M. woornooran* in having the sub-distal cross-section of the embolus with small but distinct keels, and more

extensive scopula on metatarsi I and II. Both ♂♂ ♀♀ also differ from *M. woornooran* in having distinct paired hands dorsally on the abdomen and in having eye group as wide in front as behind. The larger size and more hirsute carapace of *M. fleckeri* also distinguishes ♀♀ from those of *M. woornooran*.

Small to medium-sized spiders, carapace length c.5-7, c.40 cuspules on mound on maxillae. PMS absent. Rastellum absent. Preening combs weak to absent. Lateral eye ratio c.0.9. Scopula in distal 2/3-1/2 of metatarsi I, II. Abdomen with slight herringbone pattern dorsally (not confirmed in ♀♀). **FEMALES.** Basifemoral thorns and thorn spines absent. Spermathecae two, each a pair of parallel lobes directed ectally, inner lobe longer, outer lobe slightly shorter, both

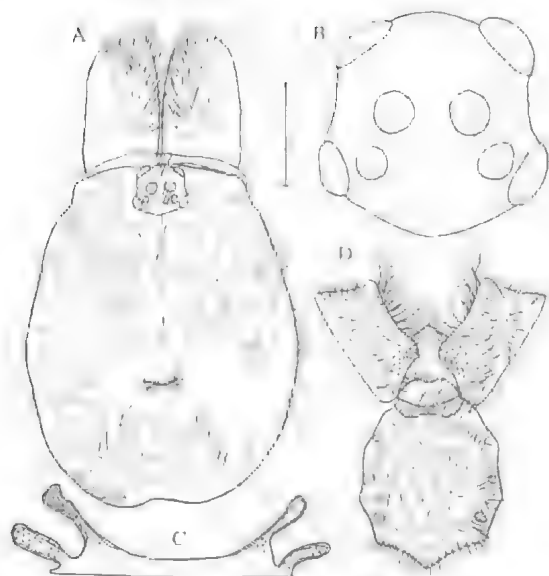


FIG. 43. *Mandjelia fleckeri* sp. nov., allotype ♀ (QMS17851). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, spermathecae, dorsal view; D, sternum, maxillae & labium, ventral view. Scale line = 2mm (A, D); 0.5mm (B, C).

lobes with apical expansion. Paired claws dentate; palpal claw bare; palpal tarsi aspinose. MALES. Tibia I ventrally with subdistal spur and angular megaspine; prolaterally a small thumb-like microspur above angular megaspine. Bulb squat, spheroidal, with quickly tapering embolus with distinct keels near origin; embolus long, curved, tapered, cylindrical in distal cross-section; cymbium concave on retrolateral face. Claws on I-III with two rows of teeth.

#### ETYMOLOGY

For Dr Hugo Flecker, M.B., Ch.M., F.R.C.S. (Edin.), B.A.R., F.F.R., D.R., F.R.G.S.A., Founder of the North Queensland Naturalist's Club and its President for many years. Dr Flecker, who died in 1951, was a widely respected naturalist.

#### DESCRIPTION

##### HOLOTYPE MALE QMS17840

Carapace 5.63 long, 4.75 wide. Abdomen 6.38 long, 4.38 wide. Total length, 13.

**Colour** (freshly moulted). Carapace cream brown with darker areas on caput and along margins, chelicerae similar, and legs yellow brown, not annulated. Abdomen dorsally brown with three pairs of irregular diagonal pallid bands centrally, in front of them another wide very

indistinct band, behind them a pair of pallid spots; ventrally pallid, an indistinct brown band between posterior book lung covers, and two irregular transverse bands in front of spinnerets.

**Carapace.** Piloosity: uniform dense cover of long silver hairs, also in interstrial ridges and long black bristles; striae indistinct, narrow. Bristles: 3-4 erect black beside posterior striae; c.10 fine anteromedially; 4 long thick and few finer between PME, and 4 long thick and few finer between ALE; hirsute cuticular shelf for full length of carapace below it; light bush of long hairs and long thick curved bristles on lateral margins. Fovea short, slightly recurved.

**Eyes.** Tubercle distinct. Group occupies 0.33 of head-width; front width, back width, length, 33, 35, 30, respectively. Back row recurved. MOQ front width, back width, length, 23, 23, 21, respectively. AME:ALE:PME:PLE, 10:11:6:12. Eye interspaces: AME-AME, 0.6; AME-ALE, 0.5; ALE-PLE, 1.2; PME-PME, 1.2; PME-PLE, 0.1; ALE-ALE, 1.3.

**Chelicerae.** Wide band of long black bristles prodorsally, laterally two bands of short bristles and long silver hairs. Rastellum absent, only thin bristles over fang. Furrow promargin with 7 spaced mixed with two smaller teeth, basomesally without teeth or granules.

**Labium.** 0.28 long, 0.88 wide; with central cluster of 8-10 bristles. Labiosternal suture a narrow continuous groove.

**Maxillae.** 1.56 long in front, 1.96 long behind, 0.72 wide; with c.40 cuspules in inner angle on distinct mound. Heel rounded; anterior lobe, pointed, distinct.

**Sternum.** 2.88 long, 2.44 wide. Sigilla all small, oval, marginal.

**Legs.** Tibia I ventrally with subdistal spur and angular megaspine; prolaterally a small thumb-like microspur above angular megaspine. Thorn spines, preening combs, and basifemoral thorns absent. Leg IV missing.

	I	II	III	IV	Palp
Femur	5.06	5.06	4.69	-	2.94
Patella	3.00	2.69	2.31	-	2.31
Tibia	4.19	3.94	3.38	-	2.13
Metatarsus	4.13	4.00	4.44	-	-
Tarsus	2.25	2.06	2.00	-	1.00
Total	18.63	17.75	16.82	-	8.38

**Scopula.** Metatarsi: I, II, diagonal, thin for length, full on prolateral, denser in distal 1/2, entire; III, two narrow triangles in distal 1/3; IV, missing. Tarsi, scopulate surfaces pallid: I, II, hairs long, full, moderately dense, entire save for one line of pallid setae; III, thin, divided by setal band 2-3 wide; IV, missing.



**Spines.** I: fe p1, d4, pa 0, ti p2 + megaspine, v5 + megaspine, me p1, v1 basal, II: fe p1, d4, pa 0, ti p2, v6, me p2, v3. III: fe p3, d4, r2, pa p3, ti p2, d2, r2, v8, me p4, r3, v9. IV: missing. Palp: fe p1, d3, pa 0, ti p1, v4.

**Claws.** Two scooped rows each of 5 teeth on leg I; two parallel rows each of 3 teeth set high on long slender claws of leg III.

**Trichobothria.** Two rows, each of c.10 for length of tibiae; c.15 on metatarsi in curving row; c.3 small clavate and c.20 filiform on tarsi.

**Palp.** Bulb squat, spheroidal, with quickly tapering embolus with distinct keel near origin; embolus long, curved, tapering, cylindrical in cross-section distally; cymbium concave on retrolateral face.

**Spinnerets.** PMS absent. Basal, middle, apical, total articles of PLS, 1.00, 0.55, 0.30, 1.85 long, respectively.

#### ALLOTYPE FEMALE QMS17851

Carapace 6.88 long, 5.44 wide. Abdomen 7.50 long, 5.31 wide. Total length, 17.

**Colour.** Carapace, chelicerae, and legs light orange brown, legs not annulated. Abdomen damaged.

**Carapace.** Pilosity: uniform and moderately dense pile of long wavy black hairs over caput and interstrial ridges, hairs mixed with light uniform cover of fine black bristles; striae indistinct, narrow. Bristles: 3-4 erect black beside posterior striae; 6 long anteromedially and many shorter in band beside caput; 5 long thick and several finer between PME, and 2 long thick and 6-8 finer between ALE; bush of long golden hairs and 2-4 bands of black bristles on lateral margins. Fovea short, procurved.

**Eyes.** Tubercle low distinct. Group occupies 0.29 of head-width; front width, back width, length, 40, 45, 37, respectively. Back row recurved. MOQ front width, back width, length, 25, 31, 19, respectively. AME:ALE:PME:PLE, 10:14:6:11. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.6; ALE-PLE, 1.5; PME-PME, 1.3; PME-PLE, 0.1; ALE-ALE, 1.6.

**Chelicerae.** Narrow band of many long and short black bristles prodorsally, laterally with few short fine setae. Rastellar spines and mound absent; few long curved bristles over fang. Furrow promargin with 8 spaced teeth, basomesally with 10-15 granules.

**Labium.** 0.60 long, 1.12 wide; with central cluster of 6-8 bristles. Labiosternal suture a wide continuous groove.

**Maxillae.** 1.92 long in front, 2.68 long behind, 1.28 wide; with c.41 cuspsules on distinct mound in inner angle. Heel rounded; anterior lobe, distinct.

**Sternum.** 3.40 long, 2.88 wide. Sigilla all small, oval, marginal.

**Legs.** With uniform cover of fine black hairs mixed with bristles, hairs most numerous on lateral femora, Basifemoral thorns and thorn spines absent. Preening combs: I of 2-3 weakly paired setae on retroventral IV.

	I	II	III	IV	Palp
Femur	4.38	3.88	3.50	5.19	3.19
Patella	3.13	2.88	2.19	2.63	2.25
Tibia	3.38	3.00	2.44	4.13	2.25
Metatarsus	2.63	2.56	2.88	4.69	-
Tarsus	1.50	1.31	1.50	1.75	2.31
Total	15.02	13.63	12.51	18.39	10.00

**Scopula.** Metatarsi: I, II, diagonal, prolaterally full to distal 2/3(I) or 1/2 (II) retrolaterally, dense, entire; III, in distal 2 narrow triangles in distal 1/5; IV, 2 narrow bands in distal 1/6. Tarsi: I, II, full, dense, entire save for line of setae distal on I, full length of II; III, hairs long, thin, divided by setal band 4-6 wide; IV, divided by setal band 6-8 wide.

**Spines.** I: fe p1, d5, pa 0, ti p1w, v2, me v2. II: fe p1, d4, pa 0, ti p1, v2, me v2. III: fe p1, d3w, r2w, pa p2, ti p2, r2, v7, me p4, r3, v6. IV: fe d3w, r1, pa 0, ti r2, v8, me p2, r3, v10. Palp: fe p1, d4, pa 0, ti p1, v6.

**Claws.** 4 small teeth on outer faces of claws of leg I; 2 teeth on outer faces of leg IV, palpal claw slightly smaller than tufts and leg claws, bare.

**Trichobothria.** Two rows, each of c.10 for length of tibiae; c.10 on metatarsi in short, curving row; c.3 small clavate and c.20 filiform on tarsi.

**Spermathecae.** Two, each a pair of parallel lobes directed ectally, inner lobe longer, outer lobe slightly shorter, both lobes with apical expansion.

**Spinnerets.** PMS absent. Basal, middle, apical, total articles of PLS, 1.00, 0.35, 0.13, 1.48 long, respectively.

#### DISTRIBUTION & HABITAT

Open forest at 500m at Mt Cleveland, just south of Townsville, NEQ.

#### REMARKS

The abdomens of both ♀♀ are damaged so that no pattern is discernible.

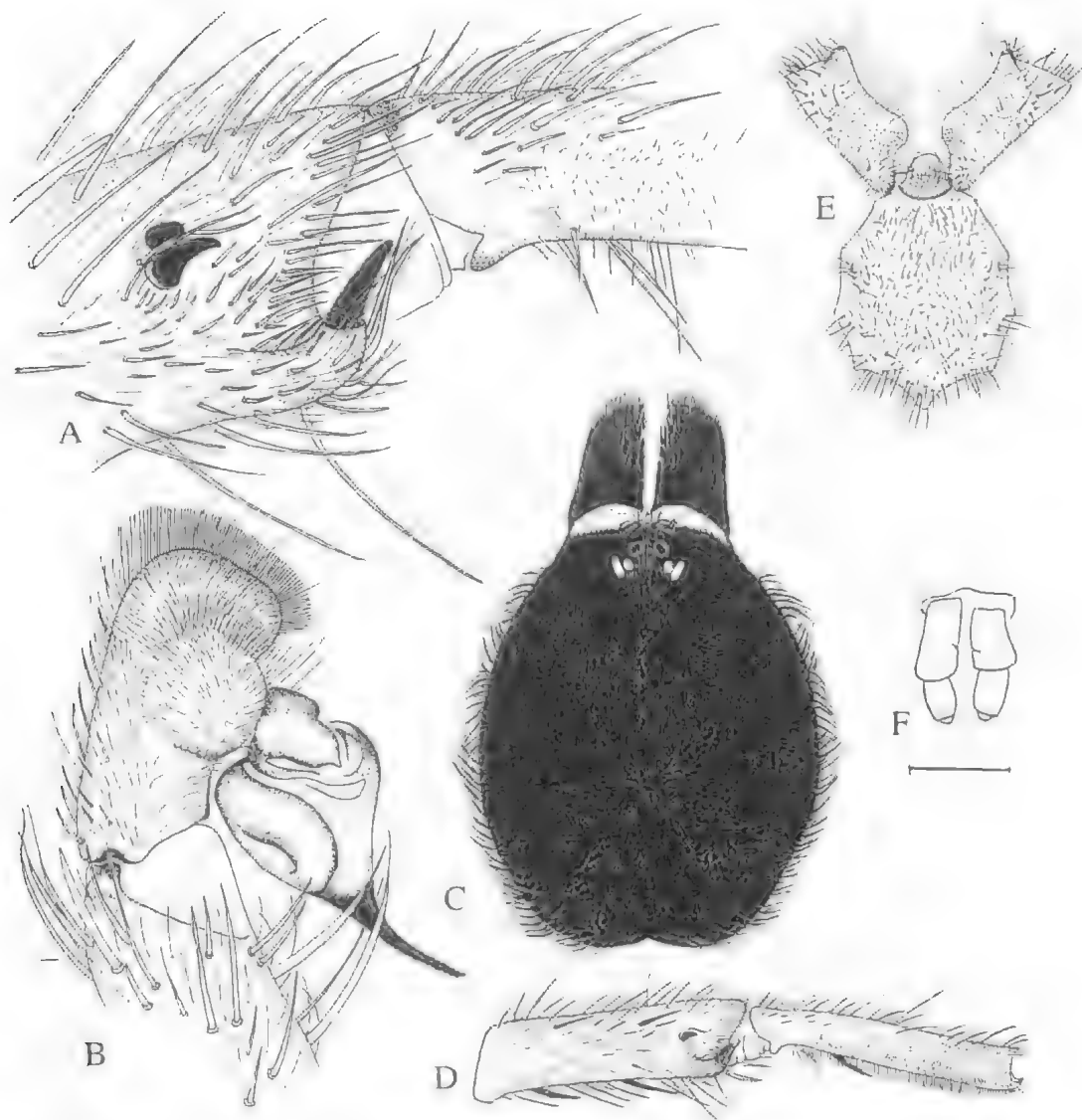


FIG. 44. *Mandjelia galmarra* sp. nov., holotype ♂ (QMS19607). A, D, tibia & metatarsus I, prolateral view; B, palpal tibia, cymbium & bulb, proventral view; C, carapace & chelicerae, dorsal view; E, sternum, maxillae & labium, ventral view; F, spinnerets, ventral view. Scale line = 0.5mm (B, F); 1mm (A); 2mm (C-E).

***Mandjelia galmarra* Raven & Churchill, sp. nov.**  
(Figs 30, 44, Table 3)

**MATERIAL EXAMINED**

TYPE. Holotype ♂, Captain Billy Ck, Cape York Peninsula, NEQ, 11°40'S, 142°50'E, 27 Feb 1992, GBM, QM S19607.

**DIAGNOSIS**

In the form of the tibial spur *M. galmarra* resembles *M. brassi* from which it differs, along

with *M. banksi*, in having small but distinct posterior median spinnerets.

Medium-sized spiders, carapace length c.8. c.50-60 cuspules on maxillae. PMS minute, Ras-tellum absent. Preening combs absent. Lateral eye ratio c.0.9. Scopula for full length of metatarsi I, II. Abdomen dorsally pallid with darker mottling. FEMALE. Unknown. MALES. Tibia I with conical subdistal spur; microspur distinct, thumb-like; upper megaspine long, curved. Palpal bulb broad, pyriform tapering abruptly to

slender embolus with no keels or ridges; retrolateral face of cymbium distinctly concave. Two rows of teeth on claws of leg I, one row on IV.

#### ETYMOLOGY

A noun in apposition taken from the correct name of Jackey Jackey who accompanied Edmund Kennedy (1818-1848), explorer, from Rockingham Bay (Cardwell, 18°16'S) to the tip of Cape York on what Pike (1978) describes as 'one of the greatest dramas in Australian exploration—an epic of endeavour as great as that of those other gallant explorers, Burke and Wills,....'

#### DESCRIPTION

HOLOTYPE MALE QMS19607

Carapace 8.13 long, 6.88 wide. Abdomen 7.50 long, 4.50 wide. Total length, 18.

**Colour.** Carapace orange brown with many narrow paler bands radiating from fovea, chelicerae similar, and legs red brown, not banded. Abdomen dorsally pallid with darker mottling; ventrally dark mottling medially in transverse bands.

**Carapace.** Pilosity: dense bush of long silver hairs on caput, less dense on thorax; striae indistinct, narrow, save broad anterior. Bristles: 8-10 erect black beside posterior striae; c.9 anteromedially and 10-15 in band beside caput; 3 long thick and several finer between PME, and 1 long thick and many finer between ALE; bush of long silver hairs and long black bristles on lateral margins. Fovea short, straight to slightly procurved.

**Eyes.** Tubercle distinct, high. Back row straight. Group occupies 0.36 of head-width; front width, back width, length, 50, 56, 48, respectively. MOQ front width, back width, length, 36, 40, 29, respectively. AME:ALE: PME:PLE, 17:20:13:17. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.5; ALE-PLE, 1.1; PME-PME, 1.5; PME-PLE, 0; ALE-ALE, 1.2.

**Chelicerae.** Similar pilosity to carapace; many long black bristles prodorsally in narrow band, laterally hirsute. Rastellum, mound and intercheliceral tumescence absent. Furrow promargin with 10 spaced teeth, basomesally with 8-10 fine pale teeth and several granules.

**Labium.** 0.60 long, 1.28 wide. Labiosternal suture a broad groove, medially narrowed.

**Maxillae.** 2.28 long in front, 3.20 long behind, 1.20 wide; with 50-60 pointed cuspules in inner angle. Heel produced; anterior lobe distinct.

**Sternum.** 4.52 long, 3.64 wide. Sigilla: posterior distinct, oval; others indistinct, circular; all marginal.

	I	II	III	IV	Palp
Femur	7.06	6.63	6.31	8.00	4.38
Patella	3.94	3.75	3.00	3.50	2.63
Tibia	5.06	4.63	4.00	6.31	3.06
Metatarsus	5.38	4.81	5.25	7.56	
Tarsus	2.63	2.56	2.38	2.63	1.69
Total	24.07	22.38	20.94	28.00	11.76

**Scopula.** Metatarsi: I, II, full, dense, entire; III, in distal 2/3, mixed with setae; IV, in distal 1/3, divided by setal band 3-4 wide. Tarsi: I, II, full, dense, entire; III, divided by setal band 1 wide; IV, divided by setal band 3-5 wide.

**Spines.** I: fe p1, d5, pa 0, ti p2 + megaspine, v3, me v1. II: fe p1, d4, pa p1, ti p2, v5, me v1, III: fe p3, d4, r2, pa p2, r1, ti p2, d1, r3, v7, me p5, r4, v7. IV: fe p1, d5, r1, pa 0, ti p1, r4, v8, me p3, r4, v7. Palp: fe p1, d4, pa 0, ti p2, v3.

**Claws.** 2-3 teeth in outer, 5-6 on high set inner rows on claws of leg I, 2-3 only in outer rows on IV. All claws as high as tufts.

**Trichobothria.** Two rows, each of c.10 for 3/4 of tibiae; c.20 on metatarsi in long curved row (IV) to shorter (distal 3/4) curved row with distal cluster; c.4 small clavate and c.15-20 filiform on tarsi.

**Palp.** Bulb broad, pyriform tapers abruptly to long slender embolus with no evident keels or ridges; retrolateral face of cymbium distinctly concave.

**Spinnerets.** PMS minute, almost caplike; 0.10 long, 0.08 wide, 0.10 apart, and c.0.11 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 1.50, 0.65, 0.13, 2.28 long, respectively.

#### DISTRIBUTION & HABITAT

Captain Billy Creek, Cape York, NEQ: the most northerly known locality of the genus.

**Mandjelia humphreysi** Raven & Churchill,  
sp. nov.  
(Figs 30, 45, Table 4)

#### MATERIAL EXAMINED

TYPES. Holotype ♂, Woodline, 31°53'S 122°27'E, WAM Goldfields Survey, 8/1980 WLR 9, Gimlet woodland, WFH et al, WAM 83/393; paratype ♂, Buningonia Spring, 31°26'45"S 123°31'23"E, BSR 3 Triodia, WFH et al, WAM 83/131. Both in WA.

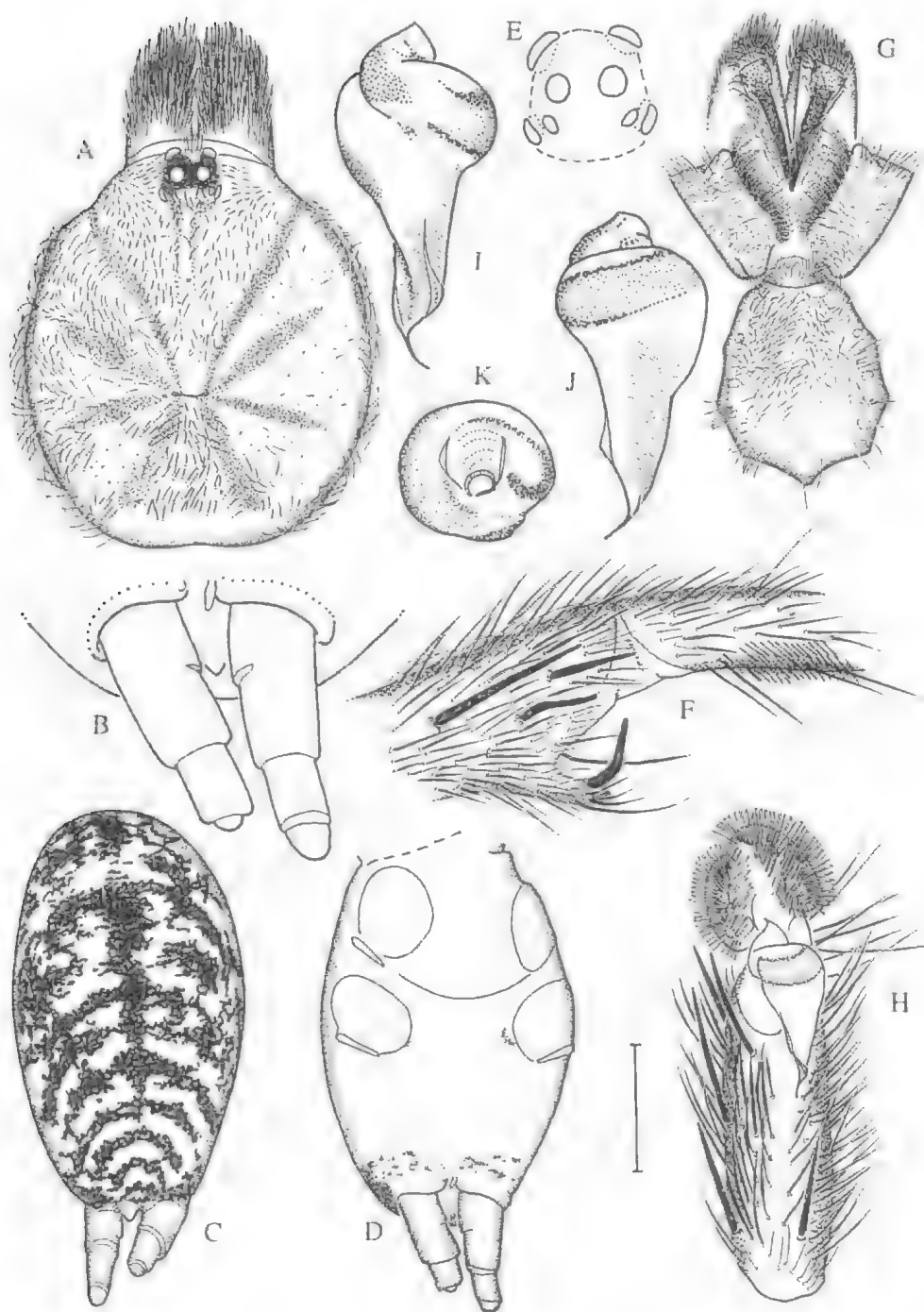


FIG. 45. *Mandjelia humphreysi* sp. nov., holotype ♂ (WAM 83/393). A, carapace & chelicerae, dorsal view; B, spinnerets, ventral view; C, D, abdomen, dorsal view (C), ventral view (D); E, eye group, dorsal view; F, tibia & metatarsus I, prolateral view; G, chelicerae, sternum, maxillae & labium, ventral view; H, cymbium & palpal bulb, ventral view; I, J, K, palpal bulb, ventral (I), retrolateral (J) & axial view (K). Scale line = 2mm (A, C, D, G); 1mm (B, E, F, H); 0.5mm (I, J, K).

## DIAGNOSIS

Differs from *Synothele karara* in having only minute PMS, the dense cuspules on the maxillae, and the comb of spines on femur III of the ♂.

Medium-sized, carapace length c.7, c.60 cuspules on maxillae, PMS minute, Rastellum absent. Preening combs and thorn spines absent. Lateral eye ratio c.1.2. Scopula in distal 5/6 of metatarsi I, II. Abdomen with herringbone pattern dorsally, MALES. Intercheliceraral tumescence small, pallid, hirsute, not soft. Tibia I with subdistal slender spur and slender subapical megaspine; microspur minute, associated megaspine elongate, both set near base of spur. Bulb small pyriform with embolic origin, distal portion rugose with 2 low keels ending at short pointed embolus; retrolateral face of cymbium concave. Claws normal size with two rows of few teeth on leg I, IV, FEMALES. Unknown.

## ETYMOLOGY

For Dr W. (Bill) F. Humphreys, Curator of Ecology and Biogeography, in recognition of his contribution to arachnology in Western Australia and especially for his initiatives in the WAM Goldfields Survey that yielded many new species.

## DESCRIPTION

**HOLOTYPE MALE WAM 1983/393**

Carapace 6.56 long, 5.63 wide. Abdomen 6.56 long, 4.19 wide. Total length, 15.

**Colour.** Carapace orange-brown, chelicerae orange-brown, and legs light orange, not annulated. Abdomen dorsally brown, two large irregular areas anteriorly, five paired diagonal white areas medially joined; ventrally almost entirely pallid save for few brown specks in front of spinnerets.

**Carapace.** Pilosity: uniform cover of short moderately thick black bristles, lateral margins with long curved black bristles and light pile of long silver hair; striae shallow indistinct. Bristles: no thick erect black beside posterior striae; anteromedially and c.10, no band beside caput; c.6 long thick and c.4 finer between PME, c.4 long thick and 6-10 finer between ALE. Fovea short, deep, slightly procurved, medially with short groove on posterior margin.

**Eyes.** Tubercle distinct, raised. Group occupies 0.29 of head-width; front width, back width, length, 63, 72, 60, respectively. Back row recurved. MOQ front width, back width, length, 49, 51, 34, respectively. AME:ALE:PME:PLE, 23:20:10:19. Eye interspaces: AME-AME, 0.5;

AME-ALE, 0.6; ALE-PLE, 1.3; PME-PME, 1.5; PME-PLE, 0.2, ALE-ALE, 1.1.

**Chelicerae.** Wide band of long black bristles and fine silver hairs bristles prodorsally, laterally narrow band of short silver hairs. Rastellum absent, but long curved bristles over fang edge. Intercheliceraral tumescence small, pallid, hirsute, not soft. Furrow promargin with 6-7 spaced teeth, basomesally with 10-15 fine granules.

**Labium.** 0.41 long, 1.06 wide; short, band of 6-8 setae behind short glabrous ridge. Labiosternal suture two separated sigilla.

**Maxillae.** 1.88 long in front, 2.28 long behind, 0.94 wide; c.60 cuspules in inner angle on low mound. Heel rounded; anterior lobe small distinct.

**Sternum.** 3.41 long, 2.91 wide. Sigilla small oval, marginal; posterior pair like middle.

**Legs.** Tibia I with subdistal slender spur and slender subapical megaspine; microspur minute, associated megaspine elongate, both set near base of spur. Thorn spines and preening combs absent.

	I	II	III	IV	Palp
Femur	6.31	6.00	5.88	7.88	3.25
Patella	3.38	3.25	2.63	3.00	2.00
Tibia	4.69	4.38	4.31	6.31	2.06
Metatarsus	5.00	4.88	5.65	7.75	-
Tarsus	2.63	2.81	3.13	3.44	1.31
Total	22.01	21.32	21.58	28.38	8.62

**Scopula.** Scopulate surfaces of tarsi pallid, soft. Metatarsi: I, II, long, thin distal 3/4 divided by single line of setae; III, in distal 1/2-1/3, hairs long, thin, divided by setal band; IV, in distal 1/4, divided. Tarsi: I-III, long full, dense, entire; IV, divided by setal band 2-3 wide.

**Spines.** I: fe p2, d7, r1, pa 0, ti p3, v4 + megaspine, me p1, v1 basal leg2, fe p3, d7, r3, pa 0, ti p2, v7, me p2, v1. III: fe p3, d5, r2, pa p2, r1, v1, ti p3, r3, v6, me p4, r4, v7. IV: fe d5, p1, r3, pa 0, ti p3, r4, v9, me p5, r6, v14. Palp: fe, p1, d5, pa 0, ti p2, v4.

**Claws.** Leg I with 1-2 long knife-like teeth on outer faces. 4-6 shorter teeth for half scoop; 2 teeth in each of two parallel non-aligned rows on leg IV; all claws of similar size.

**Trichobothria.** Two rows, each of c.9 for 1/2 length of tibiae; c.20 on metatarsi in curving row; c.5 small clavate and c.20 filiform on tarsi.

**Palp.** Bulb small pyriform with embolic origin, distal portion rugose with 2 low keels ending at short pointed embolus; retrolateral face of cymbium concave.

**Spinnerets.** PMS each a minute teat, 0.13 long, 0.05 wide, 0.13 apart, and c.0.08 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.25, 0.50, 0.13, 1.88 long, respectively.

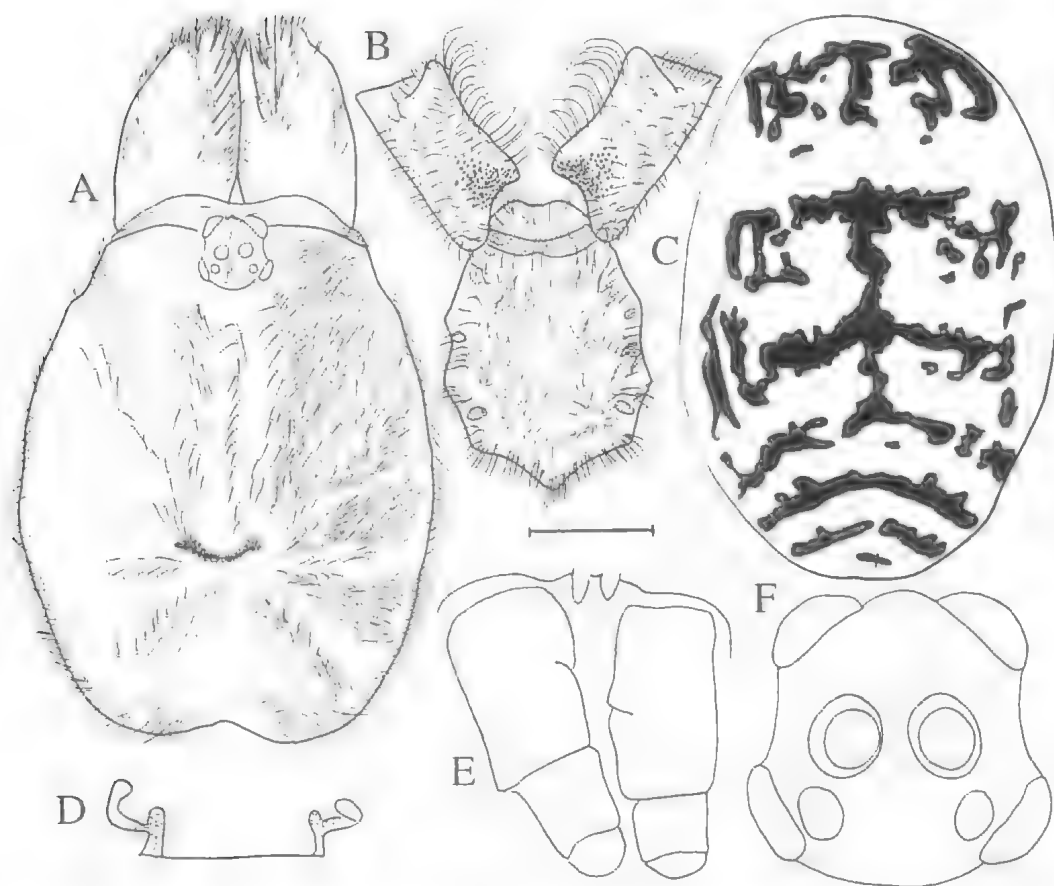


FIG. 46. *Mandjelia iwupataka* sp. nov., holotype ♀ (SAMA N1992237). A, carapace & chelicerae, dorsal view; B, sternum, maxillae & labium, ventral view; C, abdomen, dorsal view; D, spermathecae; E, spinnerets, ventral view; F, eyes, dorsal view. Scale line = 1mm (A-C); 0.5mm (D-F).

#### DISTRIBUTION & HABITAT

Gimlet woodland, Woodline, and Buningonia Spring, WA.

#### REMARKS

This is the only known *Mandjelia* with an intercheliceral tumescence. The upper megaspine on tibia I is absent in the paratype, however, the microspur is present; otherwise, the holotype and paratype are essentially identical. The megaspine absence is presumably a unilateral aberration.

***Mandjelia iwupataka* Raven & Churchill, sp. nov.**  
(Figs 5H, 30, 46. Table 4)

#### MATERIAL EXAMINED

TYPES. Holotype ♀, Standley Chasm, west of Alice Springs, [23°43'S 133°27'E], NT, 5 Jun 1981, DH, SAMA N1992237; paratype ♀, same data but SAMA N1992238.

#### DIAGNOSIS

Females differ from those of *M. oenpelli* in the distinct posterior median spinnerets and fishbone pattern on the abdomen dorsally.

Large, carapace length c.9-10. c.90-100 cuspules on maxillae. PMS small, distinct. Rastellum absent. Preening combs only on retrolateral IV. Lateral eye ratio 1.3. Scopula for length of metatarsi I, diagonal on II. Abdomen dorsally with fishbone pattern. FEMALES. Basifemoral thorns and thorn spines absent. Scopula weak on metatarsi IV. Spermathecae two, each a stalked 'G'. Paired claws long, bare; palpal claw small, bare; palpal tarsi aspinose. MALES. Unknown.

#### ETYMOLOGY

From a native word for a town near the type-locality.



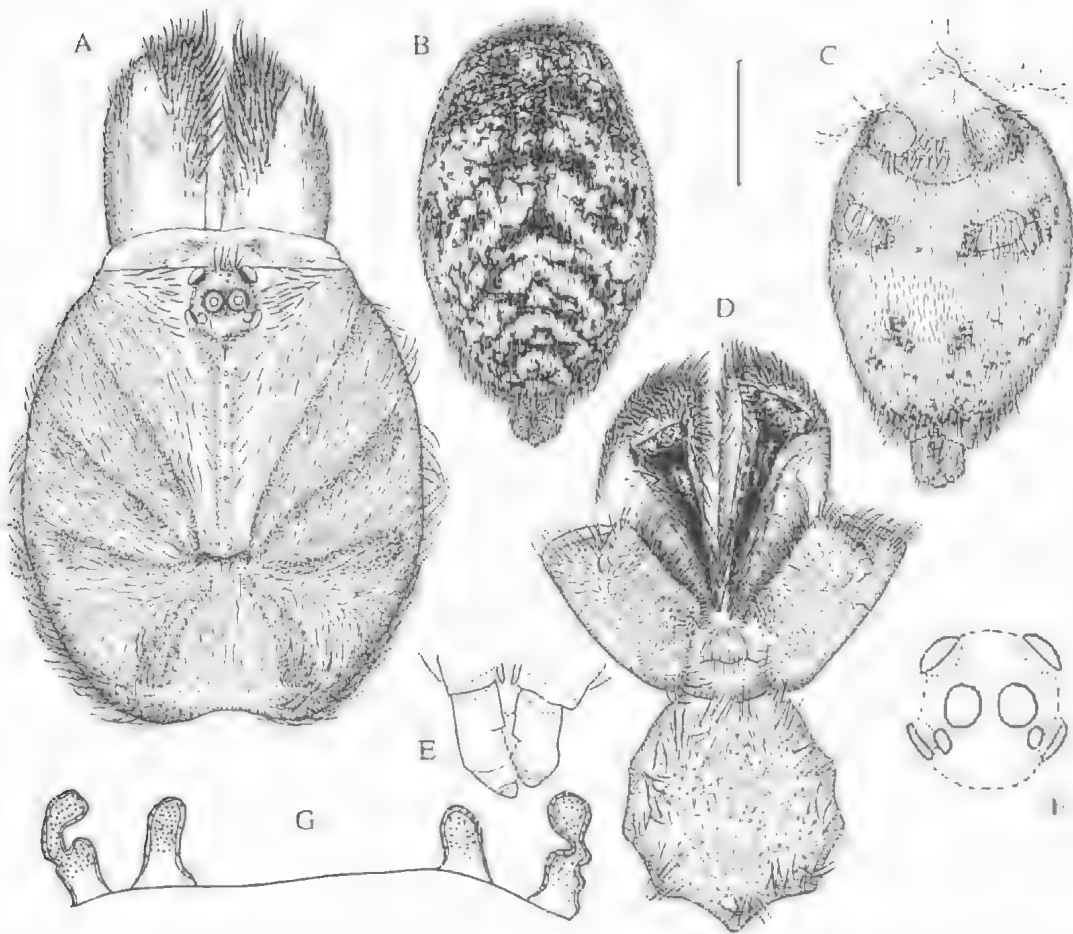


FIG. 47. *Mandjelia macgregeri* sp. nov., holotype ♀ (QMS8211). A, carapace & chelicerae, dorsal view; B, C, abdomen, dorsal (B), ventral view (C); D, chelicerae, sternum, maxillae & labium, ventral view; E, spinnerets, ventral view; F, eye group, dorsal view; G, spermathecae. Scale line = 2mm (A, D, E); 4mm (B, C); 1mm (F); 0.25mm (G).

#### DESCRIPTION

##### HOLOTYPE FEMALE

Carapace 9.07 long, 6.93 wide. Abdomen 9.60 long, 6.13 wide. Total length, 21.

**Colour.** Carapace, chelicerae, and legs light orange brown, not annulated. Abdomen dorsally pallid with irregular brown area anteriorly, followed by five slender brown bands across and a medial longitudinal band for anterior two-thirds; ventrally pallid save for small brown areas laterally.

**Carapace.** Pilosity: uniform cover of short fine brown hairs and long bristles; striae indistinct, glabrous, narrow. Bristles: c.5 thick erect black beside posterior striae; c.10-15 (as scars) anteromedially and 30-40 in band beside caput; c.4 long thick and few finer between PME, and 6

long thick and few finer between ALE, light bush of short silver hairs and brown bristles on lateral margins. Fovea short, procurved.

**Eyes.** Tuercle distinct. Group occupies 0.24 of head-width; front width, back width, length, 63, 76, 65, respectively. MOQ front width, back width, length, 44, 48, 30, respectively. Back row recurved, front width, back width, length, 63, 76, 65, respectively. MOQ front width, back width, length, 44, 48, 30, respectively. AME:ALE:PME, 20:25:12:24. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.6; ALB-PLE, 1.3; PME-PME, 1.5; PME-PLE, 0.1; ALE-ALE, 1.0

**Chelicerae.** Wide band of several long and many short brown bristles and pile of silver hair prodorsally, laterally light cover of silver hair not confined to band. Rastellum and mound absent;

many long curved bristles overhang fang. Furrow promargin with 7 large spaced teeth, basomesally with 9 small teeth in basal third.

**Labium.** 1.42 long, 2.71 wide; no distinct glabrous area; 8-10 long setae in anterior half, and band of many fine setae behind that. Labiosternal suture a continuous narrow groove.

**Maxillae.** 4.65 long in front, 5.87 long behind, 2.58 wide; with c.90-100 cuspules in inner angle on low but distinct mound. Heel produced, rounded; anterior lobe broad but distinct with long defining groove.

**Sternum.** 4.06 long, 3.23 wide; margins only with fine hair anterior to back sigilla. Sigilla all small, oval, marginal.

	I	II	III	IV	Palp
Femur	5.60	5.07	4.93	6.53	4.40
Patella	4.00	3.20	3.07	3.73	2.53
Tibia	4.00	3.33	2.93	4.93	2.27
Metatarsus	3.20	3.07	4.00	5.73	-
Tarsus	1.73	2.00	2.27	2.40	2.00
Total	18.53	16.67	17.20	23.32	11.20

**Legs.** Anterior faces of femora I, II with pile of fine hairs. Basifemoral thorns and thorn spines absent. Preening combs: 1 of 2 setae on retroventral IV only.

**Scopula.** Metatarsi: I, full, dense, entire; II, strongly diagonal, less dense, divided by setal band 2-4 wide; III, IV, in distal 1/2 (III)-1/3(IV), divided by setal band. Tarsi: I, full, dense, entire; II-IV, full, less dense, divided by setal band 2-4 (II), 4-6 (III), and 6-10 (IV) wide.

**Spines.** I, fe p1, d5, pa 0, ti p1, v2, me v1 basal; II, fe p1, d4w, pa 0, ti p1, v4, me v2; III, fe p1, d3, r4, pa p2, r1, ti p2, r2, v7, me p4, r2, v7; IV, fe d5w, r1, pa 0, ti r3, v7, me p4, r4, v9; palp, fe p1 d4w, pa 0, ti p1 v11.

**Claws.** All paired claws of similar size, with long distal hook, project above tufts; all bare; tufts slightly greater in diameter than tarsi; palpal claw c. 2/3 height of tuft, bare, with long distal hook.

**Trichobothria.** Two rows, each of c.9 for length of tibiae; c.15 on metatarsi in curving row; c.4 small clavate and c.20 filiform on tarsi.

**Spermathecae.** Two, each a stalked 'G', with short inner lobe and long curved outer lobe.

**Spinnerets.** PMS small but distinct; 0.19 long, 0.08 wide, 0.08 apart, and c.0.12 of basal PLS in diameter. Basal, middle, apical, and total segments of PLS, 1.44, 0.63, 0.21, 2.28 long, respectively.

#### DISTRIBUTION, HABITAT & BURROW

Standley Chasm, west of Alice Springs, Northern Territory. Collector noted: '[Burrows]' in

banks of rocky hills adjacent to chasm. The doors were wafer-like; the burrows were 12-22 cm deep, horizontal at first then vertical if rocky soil allowed.'

***Mandjelia macgregori*** Raven & Churchill, sp. nov.  
(Figs 32, 47, Table 4)

#### MATERIAL EXAMINED

**TYPES.** Holotype ♀, Allingham Ck, Bluff Downs, 60m NW Charters Towers, NEQ, 19°46'S 145°59'E, 1 May 1974, M. Archer, A. Elliott, QMS8211; ♀ paratype, same data as holotype, QMS17808.

**OTHER MATERIAL.** Juvenile (QMS17809) taken with types.

#### DIAGNOSIS

Females differ from those of all other species of *Mandjelia* and other Australian barychelids by 1 or 2 spines on the palpal tarsus on ♀♀.

Medium-sized, carapace length c.7, PMS reduced to two slightly long domes. Maxillae with c.50 cuspules. Rastellum weak. Preening combs present. Lateral eye ratio c.1. Scopula in distal 5/6 of metatarsi I, II. Abdomen with herringbone pattern dorsally. **FEMALES.** Palpal tarsi of ♀♀ spinose. Basifemoral thorns on I, II, IV with 2-5 small thorn setae. Paired claws dentate; palpal claw small, bare. Spermathecae four, ental lobes short straight, ectal lobes short, twisted; all lobes with separate openings. **MALES.** Unknown.

#### ETYMOLOGY

For Sir William MacGregor (1846-1919), Lieutenant Governor of British New Guinea, Governor of Lagos, Newfoundland and Queensland, first Chancellor of the University of Queensland, and donor of the valuable MacGregor collection of artefacts and birds to the Queensland Museum (Joyce, 1971; Ingram, 1987).

#### DESCRIPTION

**HOLOTYPE FEMALE.** QMS8211

Carapace 6.88 long, 6.24 wide. Abdomen 11.52 long, 7.52 wide. Total length, 23.

**Colour.** Carapace red brown with golden sheen of hairs, chelicerae brown, legs orange brown. Abdomen dorsally pallid with irregular brown transverse bands forming fish-bone effect, most distinct posteriorly; ventrally pallid with small brown areas between posterior book-lungs and centrally.

**Carapace.** Pilosity: uniform, moderately dense cover of fine golden brown wavy hairs, not

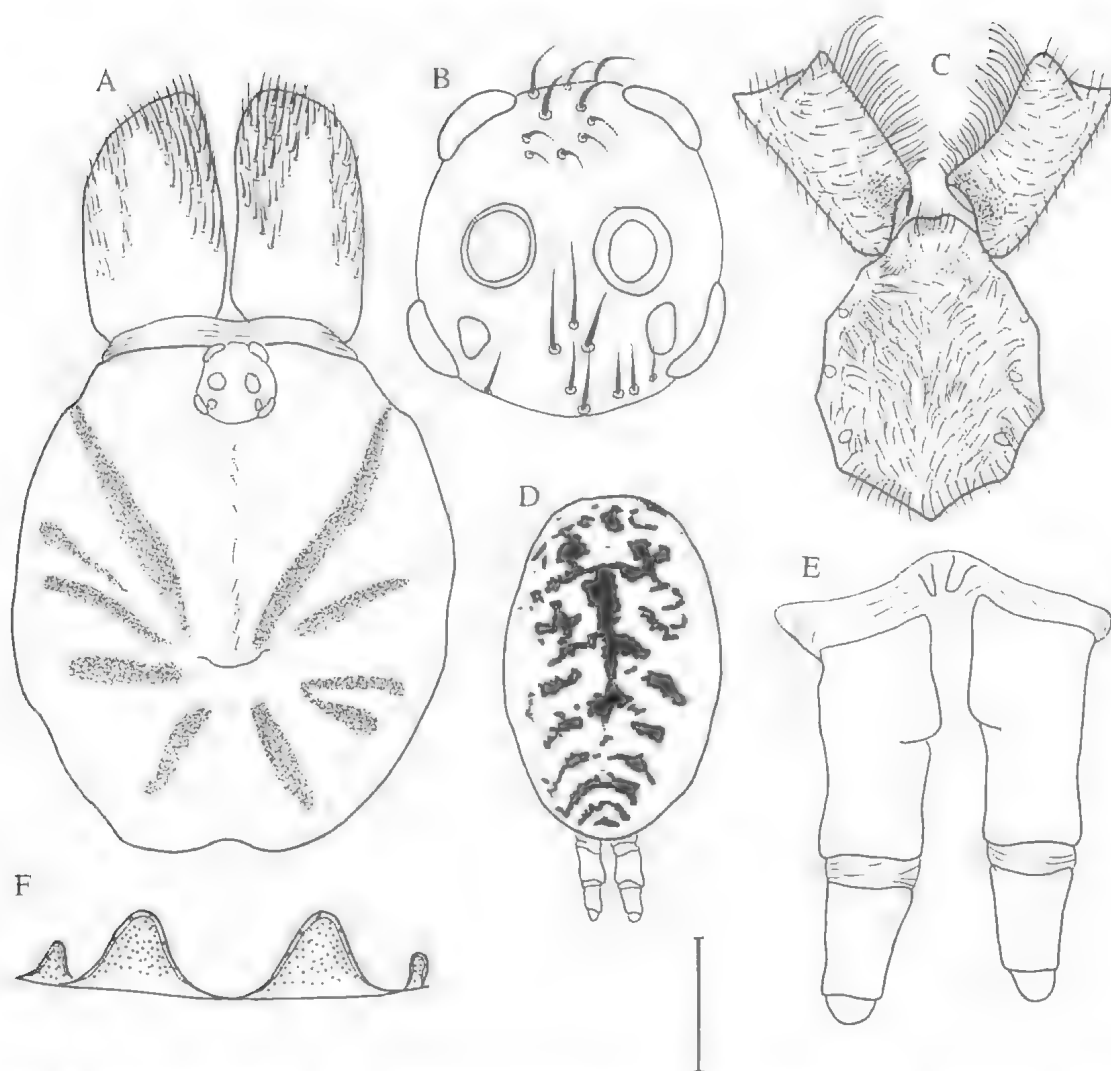


FIG. 48. *Mandjeha madura* sp. nov., holotype ♀ (WAM 89/314). A, carapace & chelicerae, dorsal view; B, eye group; C, sternum, maxillae & labium, ventral view; D, abdomen, dorsal; E, spinnerets; F, spermathecae. Scale line = 4mm (D); 2mm (A, C); 1mm (E); 0.5mm (B, F).

obscuring cuticle, more dense on posterior corners, mixed with uniform but lighter cover of fine black bristles, long along posterior striae, bases of c. 10 thick bristles anteromedially, c. 6 between PME and 3 long and several shorter between ALE. Fovea distinctly procurved. Striae glabrous, distinct.

**Eyes.** Group occupies 0.31 of head-width; front width, back width, length, 53:62:47. Back row recurved. MOQ front width, back width, length, 34:44:25. AME:ALE:PME:PLE, 11:19:10:14. Eye interspaces: AME-AME, 0.9; ALE-ALE, 2.2; PME-PLE, 0.3; PME-PME, 2.5; ALE-PLE, 2.1.

**Chelicerae.** Stout, rounded; no glabrous zone evident on upper surface; prodorsally with narrow band of moderately long black bristles mixed with shorter bristles and golden brown hairs, laterally a lightly hirsute zone and another setose zone. Rastellum a small area with long curved setae. Furrow promargin with 9 large spaced teeth, basomesally with 9 small teeth and 10-15 granules.

**Labium.** 1.20 wide, 0.72 long; distinct line of 6 long strong bristles separated from leading edge only by glabrous groove; many setae behind them. Labiosternal suture a moderately wide groove; separate sigilla not evident.

*Maxillae*. 2.16 long in front, 3.20 long behind, 1.28 wide; with c. 50 grouped cuspules on low mound in inner angle. Heel produced; anterior lobe distinct.

*Sternum*. 4.00 long, 3.44 wide; margins hirsute. Sigilla all, small, oval, marginal, indistinct, posterior pair as small as middle.

*Legs*. Basifemoral thorns on I, II, IV, each with 2-5 small thorn setae. Golden sheen of hairs on femora. Thorn spines absent but many stiff setae on prolateral patellae III, IV. Preening combs: 1 each of 2-3 on retroventral III, IV.

	I	II	III	IV	Palp
Femur	5.20	5.12	4.08	6.24	3.84
Patella	3.36	3.20	2.64	3.04	2.40
Tibia	3.52	3.12	2.80	4.88	2.40
Metatarsus	2.88	2.48	3.76	5.92	—
Tarsus	1.68	1.84	1.68	2.32	1.68
Total	16.64	15.76	14.96	22.40	10.32

*Scopula*. Metatarsi: I, II, distal 5/6, moderately dense, divided by irregular line of scattered setae; III, two narrow triangles of hairs in distal 1/3; IV, as for III but distal 1/4. Tarsi: I, II, full, divided by two lines of setae; III, full, divided by band 4-6 setae wide; IV, setal band 6-8 wide, scopula less dense in retroventral face.

*Spines*. I, fe p1, d4, pa 0, ti p2, v2, me v5; II, fe p1+l w, d5 w, pa 0, ti p2, v2, me p2, v4; III, fe p3, d6 w, r3, pa p3, r2, v1, ti p2, r3, v6, me p5, r4, v10; IV, fe p1, d5, r2, pa r1 v1, ti p2, r3, v10, me p4, r4, v13 palp, fe p1 d5, pa 0, ti p3 v8, ta v1 or v2 basoventrally.

*Claws*. 1 (IV) or 2 (I) teeth that extend beyond tufts; palpal claw c. half height of tufts, bare.

*Trichobothria*. Two rows, each of c. 10 for 0.6 of length of tibiae; c. 15 in curving row on metatarsi; 3 small clavate and 12-16 filiform on tarsi.

*Spermathecae*. Four, ental lobes short straight, ectal lobes short, twisted; all lobes with separate openings.

*Spinnerets*. PMS reduced only to two slightly long domes, 0.21 long, 0.15 wide, 0.10 apart, c. 0.17 of basal PLS in diameter. PLS length of basal, middle, apical, and total articles 1.08, 0.52, 0.13, 1.73, respectively.

#### DISTRIBUTION & HABITAT

Bluff Downs, in NWQ. The area includes cracking black soil plains and basalt ridges.

#### REMARKS

Both ♀♀ and the juvenile possess the spines on the tarsi of the palp.

*Mandjelia niadura* Raven & Churchill, sp. nov.  
(Figs 30, 48, Table 4)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Madura, 48 km E 31°55'S 127°29'E, WA, 7 Oct 1964, A.M. Douglas, WAM 89/314.

#### DIAGNOSIS

Females differ from those of *M. humphreysi* in having distinct posterior median spinnerets; the species is unusual in the genus for the high density and number of cuspules on the maxillae (90-110 cf. 60).

Medium-sized, carapace length c. 8, 90-110 cuspules on maxillae. PMS small, distinct. Rastellum a small, low, aspinose process. Preening combs absent. Lateral eye ratio c. 1.2. Scopula for length of metatarsi I, II. Abdomen with herringbone pattern dorsally. FEMALE. Basifemoral thorns on I, II. Thorn spines absent. Spermathecae two low triangular mounds without lateral lobes. Paired claws bare, large; palpal claw small, bare; palpal tarsi aspinose. MALES. Unknown.

#### ETYMOLOGY

From an Australian aboriginal word given to the type locality.

#### DESCRIPTION

HOLOTYPE FEMALE WAM 89/314

Carapace 7.63 long, 6.50 wide. Abdomen 9.88 long, 6.69 wide. Total length, 21.

*Colour*. Carapace, chelicerae, and legs orange brown, not annulated. Abdomen dorsally pallid with thin brown areas forming slight herringbone effect; ventrally pallid save for few small brown flecks near spinnerets.

*Carapace*. Pilosity: light pile of short silver hairs mixed with uniform cover of fine black setae; striae distinct, narrow, glabrous. Bristles: none beside posterior striae; c. 6-8 weak anteromedially; 6 long thick and few finer between PME, and c. 8 long thick and few finer between ALE; long silver hairs and fine black bristles on lateral margins. Fovea short, deep, procurved.

*Eyes*. Tubercle distinct, arched steeply. Group occupies 0.23 of head-width; front width, back width, length, 62, 75, 70, respectively. Back row recurved, MOQ front width, back width, length, 57, 58, 37, respectively. AME:ALE:PME:PLE, 21:26:17:23. Eye interspaces: AME-AME, 0.6; AME-ALE, 0.7; ALE-PLE, 1.3; PME-PME, 1.7; PME-PLE, 0.1; ALE-ALE, 1.1.

**Chelicerae.** Uniform cover of short brown bristles and narrow band of longer brown bristles prodorsally, laterally setose. Rastellum a small, low, aspinose process. Furrow promargin with 7 spaced teeth, basomesally with 14 small teeth.

**Labium.** 0.72 long, 1.41 wide; oval glabrous ridge anteriorly with c.8 thicker setae behind it and many fine setae behind those. Labiosternal suture two separated sigilla in groove.

**Maxillae.** 2.84 long in front, 3.59 long behind, 1.41 wide; with c.90-110 small blunt cuspules in inner angle on slight mound. Heel rounded, slightly produced; anterior lobe small, distinct.

**Sternum.** 4.25 long, 3.44 wide. Sigilla all small, oval, marginal.

**Legs.** 2-4 basifemoral thorns on I, II. Thorn spines and preening combs absent.

	I	II	III	IV	Palp
Femur	5.31	4.81	4.44	6.00	3.81
Patella	3.56	3.31	2.75	3.31	2.50
Tibia	3.63	3.13	2.81	4.50	2.31
Metatarsus	2.88	2.88	3.63	5.31	-
Tarsus	1.69	1.75	1.88	2.13	1.94
Total	17.07	15.88	15.51	21.25	10.56

**Scopula.** Metatarsi: I, II, full, dense, entire, save for few setae basally on II; III, IV, in distal 1/2, divided by setal band 3-5 wide. Tarsi: I, II, full, dense, entire; III, divided by narrow setal band 2-4 wide; IV, divided by narrow setal band 4-6 wide.

**Spines.** I, fe p1, d4w, pa 0, ti p2, v2, me v1; II, fe p3, d5w, pa p1, ti p2, v2, me p1, v1; III, fe p3, d4, r3, pa p2, ti p2, r2, v8, me p4, r3, v6; IV, fe d5w, r1, pa 0, ti r2, v7, me p3, r4, v8; palp, fe p1, d4w, pa 0, ti p2, v8.

**Claws.** All paired claws bare and as high as tufts; palpal claw half size of tufts, bare.

**Trichobothria.** Two rows, each of c.6 for half of tibiae; c.12 on metatarsi in curving row; c.6 small clavate and c.15 filiform on tarsi.

**Spermathecae.** Two low triangular mounds without lateral lobes.

**Spinnerets.** PMS small, evident; 0.19 long, 0.08 wide, 0.19 apart, and about 0.10 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.56, 0.67, 0.31, 2.54 long, respectively.

#### DISTRIBUTION & HABITAT

About 50 km east of Madura, WA.

#### *Mandjelia mCCRACKENI* Raven & Churchill

sp. nov.

(Figs 31, 49, Table 4)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Thornton Peak, 16°10'S 145°23'E, NEQ, 200-900m, 27 Sep 1984, GSM, QMS15205.

#### DIAGNOSIS

Differs from *M. brassi* in that the two lobes of the spermathecae are subequal and from other species of *Mandjelia* in that the outer lobe of the spermathecae is clearly higher than the inner.

Large, carapace length c.12. 50-60 cuspules on maxillae. PMS minute. Rastellum a low aspinose mound. Preening combs absent. Lateral eye ratio c.1. Scopula for length of metatarsi I, II. Abdomen with fine mottling dorsally. FEMALES. Basifemoral thorns and thorn spines absent. Spermathecae two, each of two lobes, outer lobe thicker c.6 times wider than long with apical expansion, inner lobe shorter. Paired claws dentate; palpal claw bare; palpal tarsi aspinose. MALES. Unknown

#### ETYMOLOGY

For Mr Charlie McCracken, local authority of the Daintree region and guide whose hospitality and cooperation has always been appreciated by scientists visiting the exciting isolated mountain, Thornton Peak.

#### DESCRIPTION

##### HOLOTYPE FEMALE QMS15205

Carapace 10.26 long, 7.73 wide. Abdomen 14.00 long, 9.60 wide. Total length, 29.

**Colour.** Carapace, chelicerae, and legs orange brown. Abdomen dorsally blue brown with light pallid mottling forming no discernible pattern; ventrally pallid with broken medial brown line, brown marks beside posterior book-lungs, and mottled brown area just in front of spinnerets.

**Carapace.** With uniform cover of fine black hairs generally and on lateral margins, 1-4 long black bristles beside posterior striae; c. 11 long and some short black bristles anteromedially, 6-8 long thick and several finer between PME and also between ALE; short black bristles on lateral caput and on posterior edge of striae. Povea distinctly procurved; striae broad, indistinct, setose.

**Eyes.** Group occupies 0.31 of head-width; front width, back width, length, 71:87:70. Back row slightly procurved. MOQ front width, back width, length, 45:57:38. AME:ALE:PME:PLE, 17:26:15:21. Eye interspaces: AME-AME, 0.7;

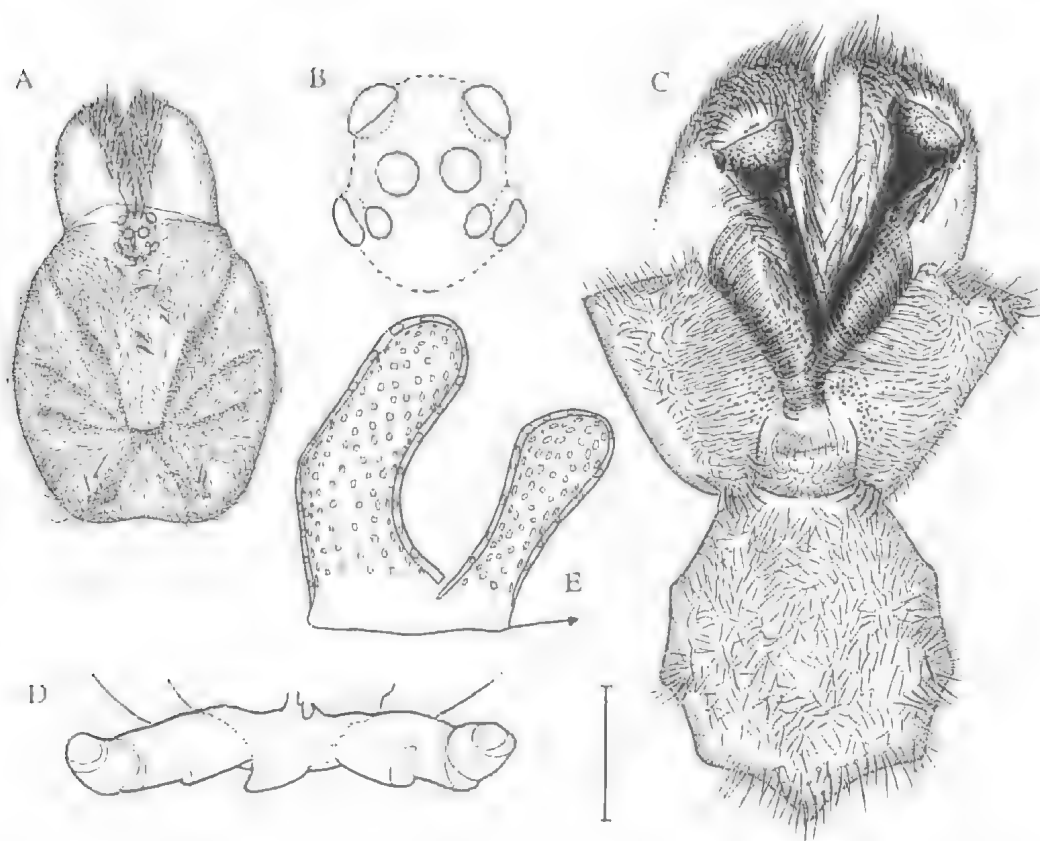


FIG. 49. *Mandjelia mccrackeni* sp. nov., holotype ♀ (QMS15205). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, chelicerae, sternum, maxillae & labium, ventral view; D, spinnerets, ventral view; E, spermatheca. Scale line = 4mm (A); 2mm (C); 1mm (B, D); 0.27mm (E).

AME-ALE, 1.2; ALE-ALE, 1.8; PME-PLE, 0.1; PME-PME, 1.7; ALE-PLE, 1.7.

**Chelicerae.** Long; prodorsally with band of few moderately long and numerous short black bristles, laterally lightly setose. Rastellum a low mound with long curved bristles. Furrow promargin with 8 large spaced teeth, basomesally with 8 small teeth and 5-7 granules.

**Labium.** 1.60 wide, 0.87 long; oval glabrous ridge anteriorly with c.8 thicker setae behind it and many fine setae behind those. Labiosternal suture a wide, shallow groove of two oval separated sigilla.

**Maxillae.** 2.73 long in front, 4.17 long behind, 1.73 wide; with c.50-60 spaced cuspsules in triangular area. Heel distinctly produced, pointed; anterior lobe short, distinct.

**Sternum.** 5.20 long, 4.53 wide; margins hirsute. Sigilla: posterior pair oval, submarginal, distinct; rest circular, marginal, indistinct.

	I	II	III	IV	Palp
Femur	5.53	5.20	4.87	7.13	5.00
Patella	4.13	4.07	3.47	4.20	3.66
Tibia	4.06	3.60	2.67	5.13	3.13
Metatarsus	3.00	2.93	4.00	6.73	-
Tarsus	1.80	1.87	2.07	2.46	2.47
Total	18.52	17.67	17.08	25.65	14.26

**Legs.** Triangular patellar spines in prolateral group. Long curled hairs on leg IV. Basifemoral thorns, thorn spines and preening combs absent.

**Scopula.** Metatarsi: I, II, full, dense, entire but mixed with few scattered setae; III, two narrow triangles in distal 1/4; IV, absent. Tarsi: I, II, full, dense, entire save for narrow band of setae 1 wide; III, full, dense, divided by setal band 6-8 wide; IV, similar but setal band 8-10 wide.

**Spines.** I, fe p1, pa 0, ti v3, me v2; II, fe p1, pa 0, ti p2, v4, me v2; III, fe r1, pa p5, r2, v2, ti p2, r3, v8, me p3, r4, v10; IV, fe r2, pa r1, v1.



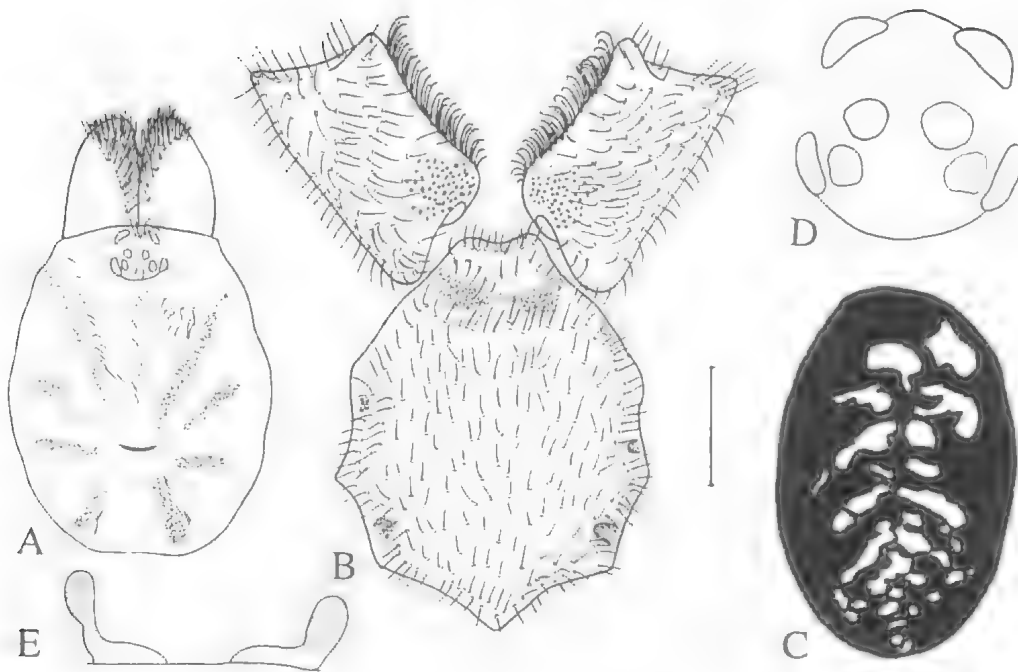


FIG. 50. *Mandjelia nuganuga* sp. nov., ♀ (QMS1608). A, carapace & chelicerae, dorsal view; B, sternum, maxillae & labium, ventral view; C, abdomen, dorsal view; D, eye group, dorsal view; E, spermathecae. Scale line = 2mm (A, C); 1mm (B); 0.5mm (D); 0.25mm (E).

ti r2, v9, me p6, r3, v12; palp, fe p1, pa v1, ti p1 v6.

**Claws.** 1-2 small teeth medially on both claws of legs I, IV; palpal claw large, slightly shorter than tufts, bare.

**Trichobothria.** Two rows, each of 9 for 2/3 on tibiae; c.17 in curved row on metatarsi; c.4 clavate and c.13 filiform on tarsi.

**Spermathecae.** Two, each of two lobes, outer lobe thicker c. 6 times wider than long with apical expansion, inner lobe shorter.

**Spinnerets.** PMS asymmetrical, no indication of damage or regeneration; one is a small sclerotised wart-like mound, the other is a dense cluster of long setae; 0.28 long, 0.24 wide, 0.28 apart, c. 0.19 of basal PLS in diameter. PLS length of basal, middle, apical, and total articles 2.32, 1.12, 0.52, 3.96, respectively.

#### DISTRIBUTION & HABITAT

Rainforest at Thornton Peak, an isolated mountain just south of Cape Tribulation, NEQ.

***Mandjelia nuganuga* Raven & Churchill,**  
sp. nov.  
(Figs 30, 50, Table 3)

#### MATERIAL EXAMINED

TYPE. Holotype ♀. Lake Nuga Nuga, 25°00'S 148°40'E, SCQ, open eucalypt forest associated with brigalow, 9 May 1978, KRM, QMS1608.

#### DIAGNOSIS

Females differ from those of *M. yuccabine* in single lobed spermathecae and the abdomen ventrally is almost totally pallid, rather than brown.

Small to medium-sized, carapace length c.6. 55-60 cuspules on maxillae, PMS absent. Rastellum absent. Preening combs on metatarsi IV. Lateral eye ratio c.1. Scopula in distal 5/6 of metatarsi I, II. Abdomen dorsally maculate. FEMALES. Basifemoral thorns and thorn spines absent. Spermathecae a single lobe, basally broadest, on each side. Paired claws dentate; palpal claw bare; palpal tarsi aspinose. MALES. Unknown.

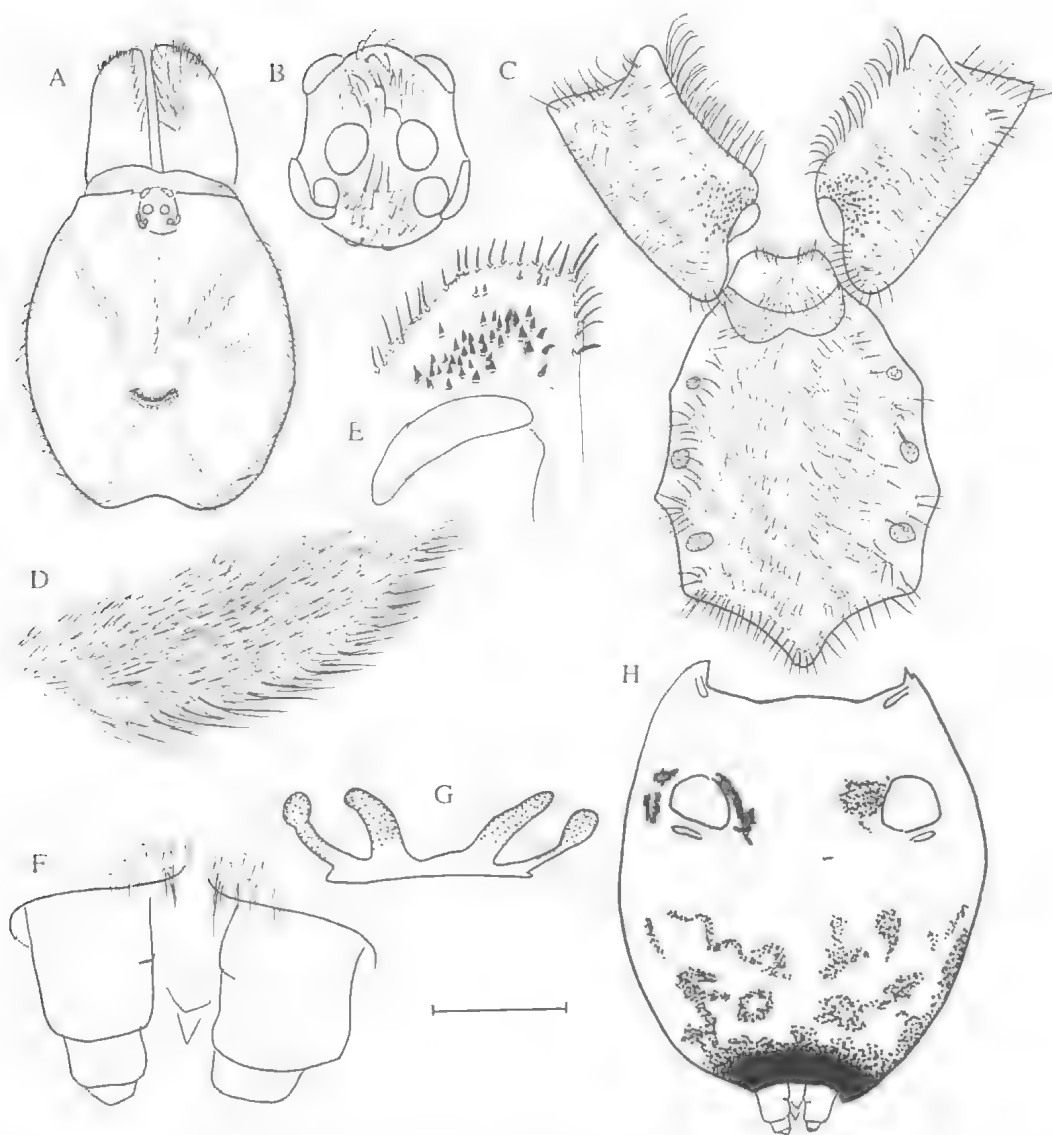


FIG. 51. *Mandjelia oenpelli* sp. nov., holotype ♀ (MAGNT). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, sternum, maxillae & labium, ventral view; D, back right corner of carapace showing full setation; E, apical chelicera with rastellum, ventral view; F, spinnerets, ventral view; G, spermathecae; H, abdomen, ventral view. Scale line = 4mm (A, H); 1mm (B, D, E, F); 2mm (C); 0.5mm (G).

#### ETYMOLOGY

From a native name of the type locality.

#### DESCRIPTION

##### HOLOTYPE FEMALE QMS1608

Carapace 5.44 long, 4.48 wide. Abdomen 6.16 long, 4.08 wide. Total length, 14.

**Colour.** Carapace, chelicerae, and legs orange-brown; abdomen dorsally brown with pallid

maculate areas; ventrally yellow brown with small brown areas.

**Carapace.** Fine brown bristles with black setae anteromedially; several long anteromedially; glabrous in striae; thick bristles beside posterior striae, and 3 paired foveal setae; many on interstitial ridges, uniformly distributed. Fovea short, procurved.

**Eyes.** Group occupies 0.28 of headwidth; group front width, back width, length, 40:48:39; back

row recurved; ratio of AME:ALE:PME:PLE, 10:16:10:15; MOQ front width, back width, length, 28:33:19. Eye interspaces: AME-AME, 0.7; AME-ALE, 1.1; ALE-ALE, 1.4; PME-PME, 1.7; PME-PLE, 0.1; ALE-PLE, 1.3.

**Chelicerae.** With many long brown setae. Rastellum absent, no mound, few long bristles on margin. Furrow promargin with 8 teeth, basomesally with 8 small teeth extending for 2/3 length of furrow and several granules basally.

**Labium.** 1.00 wide, 0.56 long; oval glabrous ridge anteriorly with c.6 thicker setae behind it and many fine setae behind those; suture two broad, shallow sigilla.

**Maxillae.** 1.60 long in front, 2.28 long behind, 1.16 wide; with c.55-60 blunt, pointed cuspules on low mound on inner corner; heel slightly produced; anterior lobe small.

**Sternum.** 3.00 long, 2.64 wide; margins hirsute. Sigilla all oval, marginal, of similar size.

**Legs.** Basifemoral thorns and thorn spines absent. Preening combs: 1 of 3 setae retrolaterally only on IV.

	I	II	III	IV	Palp
Femur	3.68	3.52	3.36	4.24	2.72
Patella	2.64	2.32	1.84	2.48	1.84
Tibia	2.72	2.48	1.92	3.28	1.60
Metatarsus	2.16	2.08	2.56	4.32	-
Tarsus	1.36	1.20	1.36	1.60	1.60
Total	12.56	11.60	11.04	15.92	7.76

**Scopula.** Metatarsi: I, II, full, entire but for line of setae medially; III, divided into 3 bands by setae; IV, barely evident, thin, divided in distal 1/4 by scattered setae. Tarsi: I, entire; II full, entire but for line of setae medially; III, thin, with narrow band of dividing setae; IV, full, divided by 3-4 setal rows; also on palp.

**Spines.** I, fe p1, d3, pa 0, ti v2, me v1; II, fe p1, d3, pa 0, ti p1, v2, me v2; III, fe p1, d2, r2, pa p2, r1, v1, ti p2, r2, v7, me p4, r3, v8; IV, fe d4, r2, pa 0, ti r3, v9, me p3, r4, v10; palp, fe p1, pa 0, ti p1, v7.

**Claws.** One row of 2-3 teeth on outer faces (I) to 1-2 teeth (IV); claw tufts dense but claw extends beyond tuft. Palpal claw slightly smaller than tuft and leg claws, bare.

**Trichobothria.** Two rows, each of 8-10 on distal 3/4 of tibiae; curving row of c.8 on metatarsi; c.10-15 filiform in irregular divided group on tarsi.

**Spermathecae.** Single lobe, basally broadest, on each side.

**Spinnerets.** PMS absent. Basal, middle, apical, and total articles of PLS, 0.72, 0.24, 0.12, 1.08 long, respectively.

#### DISTRIBUTION & HABITAT

Mulga woodland with grassland understorey at Lake Nuga Nuga, in SCQ.

**Mandjelia oenpelli** Raven & Churchill, sp. nov.  
(Figs 30, 51, Table 4)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Oenpelli area, 12°23'05"S 133°03'05"E, NT, *Alosyncarpia* forest, 22 Jul 1992, A. Wells, J. Webber, MAGNT

#### DIAGNOSIS

Females differ from those of *M. commoni* in the many more cuspules and narrower sternum.

Large, carapace length c.10-11, c.80-90 cuspules on maxillae. PMS only caps. Rastellum a low aspinose mound. Preening combs weak, on retroventral III, IV. Lateral eye ratio 1.0. Scopula for length of metatarsi I, II. Abdomen pattern unknown. FEMALES. Basifemoral thorns on I, II. Scopula weak on metatarsi IV. Spermathecae of four lobes, two on each side, each lobe much longer than wide. Paired claws long, with one tooth; palpal claw small, bare; palpal tarsi aspinose. MALES. Unknown.

#### ETYMOLOGY

From a native word for the type locality.

#### DESCRIPTION

##### HOLOTYPE FEMALE MAGNT

Carapace 10.40 long, 8.27 wide. Abdomen 15.50 long, 11.20 wide. Total length, 29.

**Colour.** Carapace, chelicerae, and legs orange brown, not annulated. Abdomen dorsally ruptured, pattern not discernible; ventrally pallid with mottling in posterior half and near posterior booklung covers.

**Carapace.** Pilosity: uniform moderately dense cover of fine hairs and bristles; striae indistinct, narrow. Bristles: none enlarged beside posterior striae; line of c.10 weak anteromedially and 15-20 in band beside caput; 3 long thick and few finer between PME, and 4-6 long thick and few finer between ALE; bush of short light brown hairs and short bristles on lateral margins. Fovea short, procurved.

**Eyes.** Tubercle distinct. Group occupies 0.22 of head-width; front width, back width, length, 74, 86, 77, respectively. Back row procurved. MOQ front width, back width, length, 52, 61, 40, respectively. AME:ALE:PME:PLE, 22:26:12:29. Eye interspaces: AME-AME, 0.4; AME-ALE, 1.0; ALE-PLE, 1.4; PME-PME, 1.6; PME-PLE, 0.1; ALE-ALE, 1.4.

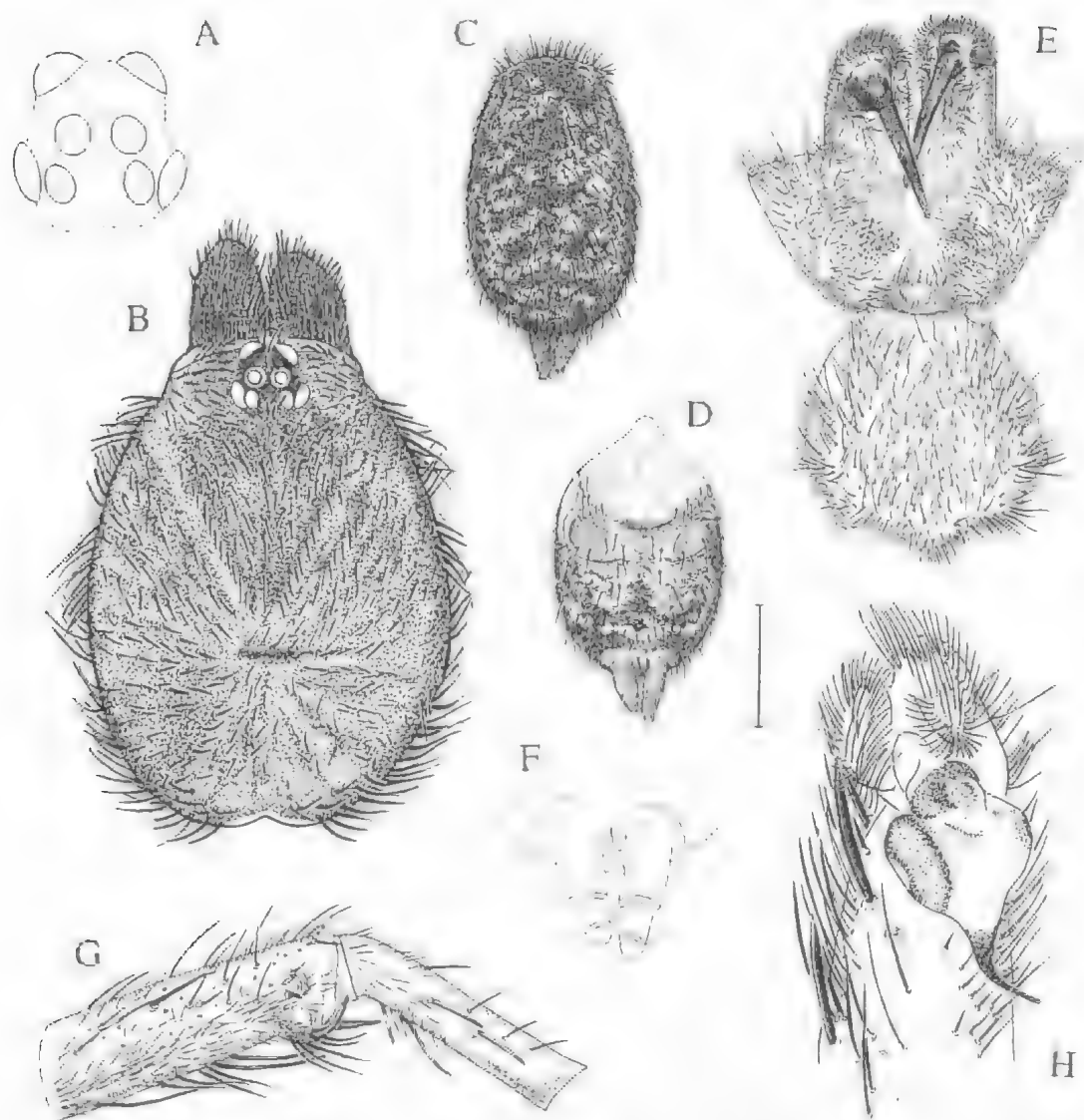


FIG 52. *Mandjelia paluma* sp. nov., holotype ♂ (QMS14767). A, eye group, dorsal view; B, carapace & chelicerae, dorsal view; C, D, abdomen, dorsal (C), ventral view (D); E, chelicerae, sternum, maxillae & labium, ventral view; F, spinnerets, ventral view; G, tibia & metatarsus I, prolateral view; H, cymbium & palpal bulb, ventral view. Scale line = 0.7mm (A, G); 1.5mm (B, E, F); 2.3mm (C, D); 0.35mm (H).

**Chelicerae.** 3-5 long and many short bristles mixed with hairs prodorsally, laterally 2 bands of fine hair. Rastellum a low mound with few long strong curved bristles. Furrow promargin with 1 small mixed with 8 large close teeth, basomesal group extends to distal half with 4 small teeth and 10-15 granules basally.

**Labium.** 1.00 long, 1.67 wide; long, narrow transverse glabrous zone in anterior half,

enclosed by group of 10 long setae, behind those a band of finer setae in no evident pattern. Labiosternal suture is two broad sigilla joined medially.

**Maxillae.** 2.93 long in front, 4.47 long behind, 1.73 wide; c.80-90 cuspules on low mound in inner angle. Heel rounded; anterior lobe broad, distinct.

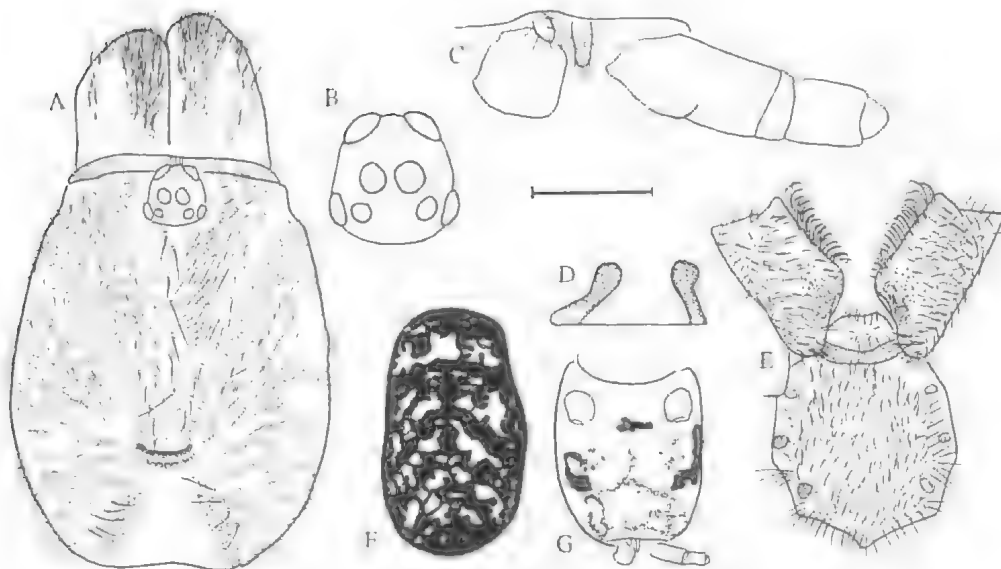


FIG. 53. *Mandjelia paluma* sp. nov., allotype ♀ (QMS19547). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, spinnerets, ventral view; D, spermathecae; E, sternum, maxillae & labium, ventral view; F, G, abdomen, dorsal (F), ventral view (G). Scale line = 1mm (B); 2mm (A, E); 4mm (F, G); 0.5mm (C, D).

**Sternum.** 5.87 long, 4.47 wide; only long fine hairs in marginal band, Sigilla all small, oval, marginal.

**Legs.** Basifemoral thorns on I (4-7), II (1-2). Thorn spines absent. Preening combs: 1 of 2 setae on retroventral III, IV.

	I	II	III	IV	Palp
Femur	6.80	5.87	5.60	7.47	5.20
Patella	4.80	4.33	3.60	4.00	3.20
Tibia	4.67	4.20	3.60	5.87	3.33
Metatarsus	3.53	3.33	4.67	7.33	-
Tarsus	2.20	2.13	2.40	2.27	2.47
Total	22.00	19.86	19.87	26.94	14.20

**Scopula.** Metatarsi: I, II, full, dense, entire; III, IV, in distal 1/3 (III)-1/4 (IV), divided by setal band. Tarsi: I, II, full, dense, entire; III, IV, divided by setal band 2-5 (III) to 5-10 (IV) wide, some setae mixed with scopula.

**Spines.** I, fe p1, d3, pa 0, ti p1 +2w, v4, me 0; II, fe p1w, d4w, pa p1, ti p2, v0, me v4, 3 basal; III, fe p3, d5, r2, pa p3, ti p2, r3, v9, me p4, r4, v11; IV, fe d4, r1, pa 0, ti r4, v9, me p5, r4, v13; palp, fe p1, d5w, pa 0, ti p2, v9.

**Claws.** On all legs of similar size and as high as claw tufts with 1 small tooth medially; tufts on legs slightly higher in diameter than tarsi; palpal claw about half size of tufts, bare.

**Trichobothria.** Two rows, each of c10 for length of tibiae; c. 15 on metatarsi in short curving row; c. 4 small clavate and c. 15 filiform on tarsi.

**Spermathecae.** Two on each side, each lobe much longer than wide and discharging separately.

**Spinnerets.** PMS absent, save for two minute caps with 3-4 slightly thicker setae. Basal, middle, apical, total segments of PLS, 1.11, 0.56, 0.19, 1.86 long, respectively.

#### DISTRIBUTION & HABITAT

Oenpelli area, NT, in *Alosyncarpia* forest.

***Mandjelia paluma*** Raven & Churchill, sp. nov.  
(Figs 32, 52, 53, Table 4)

#### MATERIAL EXAMINED

**Types.** Holotype ♂, Paluma Range, 18°57'S 146°09'E, burrow in clay bank, 3 Sep 1988, JAG, QMS14767. Paratypes: allotype ♀, Mt Halifax, 19°07'S, 146°23'E, 2 Dec 1990, AG, QMS19547; ♀ paratype, same data, QMS19548; 2 ♂♂, Mt Halifax, SE Ridge rainforest at 950m., 19-21 Mar 1991, GBM, DC, QMS17834; 3 ♂♂, Mt Halifax, summit, open forest and heath pitfall traps, 20 Mar 1991, AG, QMS19055; 1 ♂, same locality but, pitfall and intercept traps, 21 Mar-10 May 1991, DC, QMS19037. All in NEQ.

#### DIAGNOSIS

Differs from the sympatric *M. rejae* in the small but distinct posterior median spinnerets and from *M. thorelli* in the larger AME and eye group

being not so wide behind as in front. Females differ from those of *M. thorelli* in the direction of the spermathecal lobes.

Medium-sized, carapace length c.6, 50-60 cuspules on maxillae. PMS small, distinct. Rastellum absent. Preening combs on III, IV. Lateral eye ratio c.1.5. Scopula in distal 1/2-1/4 on metatarsi I, II. Abdomen with herringbone pattern dorsally. FEMALES. Scopula for distal 1/3 of metatarsi I; absent on metatarsi IV. Basifemoral thorns few, if present. Thorn spines absent. Spermathecae a pair of undivided lobes inwardly directed. Paired claws with 1-4 teeth; palpal claw small, bare; palpal tarsi aspinose. MALES. Tibia I with low distal spur and long curved megaspine; prolateral face with small conical microspur bracing short curved megaspine. Palpal bulb stout, pyriform; embolus tapered. Claws with two rows of 4-7 teeth.

#### ETYMOLOGY

From a native word for the type locality.

#### DESCRIPTION

##### HOLOTYPE MALE QMS14767

Carapace 5.88 long, 4.68 wide. Abdomen 5.68 long, 3.44 wide. Total length, 13.

*Colour.* Carapace, chelicerae, and legs dark brown. Abdomen dorsally brown with white mottling forming herringbone effect, ventrally book-lung covers yellow brown; otherwise pallid with central and posterior brown mottling.

*Carapace.* With uniform cover of silver hairs and short black bristles. Bristles: margins and outer edge of posterior striae with long thick black; line of 8-10 direct anteromedial; 3-4 foveal pairs; 2 long and several short behind PME; 1 thick recurved and 5-7 thinner between AME. Fovea short, deep, strongly procurved.

*Eyes.* Tubercle distinct. Group occupies 0.35 of head-width; front width, back width, length, 35:47:42. Back row procurved. MOQ front width, back width, length, 26:30:21. AME:ALE:PME:PLE, 12:10:13:12. Eye interspaces: AME-AME, 0.3; AME-ALE, 0.6; ALE-ALE, 0.8; PME-PLE, 0.1; PME-PME, 1.1; ALE-PLE, 1.2.

*Chelicerae.* Small, prodorsally with long black bristles and long silvery hairs in narrow band. Rastellum absent. Furrow promargin with 8 spaced teeth, basomesally with 8-10 fine granules concolorous with cuticle. Intercheliceral tumescence absent.

*Labium.* 0.88 wide, 0.36 long; strong bristles on leading edge, otherwise glabrous save for 6

strong bristles centrally. Labiosternal suture a wide shallow groove of two separate sigilla.

*Maxillae.* 1.56 long in front, 2.04 long behind, 1.12 wide; with c.50-60 spaced cuspules in triangular area, not on mound. Heel distinct, rounded; anterior lobe defined.

*Sternum.* 2.80 long, 2.52 wide. Sigilla marginal, posterior pair oval, distinct.

	I	II	III	IV	Palp
Femur	4.42	4.08	3.58	4.86	3.00
Patella	2.92	2.42	2.25	2.47	1.75
Tibia	3.33	2.92	2.42	3.87	2.25
Metatarsus	3.08	2.42	3.08	4.87	—
Tarsus	1.58	1.67	1.67	2.00	1.08
Total	15.33	13.51	13.00	18.07	8.08

*Legs.* Tibia I with low distal spur and long curved megaspine; prolateral face with small conical microspur bracing short curved megaspine. No thorn spines. Preening combs: one weak of 4 on retrolateral III, IV + strong paired spines on prolateral III.

*Scopula.* Scopulate area of all tarsi pallid. Metatarsi: I, distal 1/2, mixed with scattered setae; II, distal 1/4 thin (ventral II has mease-like bases); III, distal clump of 30-40 hairs; IV, absent. Tarsi: I, II, parted by line of setae, scopula full, but each distinct; one row of setae on I, 4-5 rows on II; III, 6-8 setal rows part scopula; IV, 8-10 setal rows; setal band wider than scopula.

*Spines.* I, fe p2, d4, pa 0, ti p2, v6 + megaspine, me p1, v3; II, fe p2, d3, pa 0, ti p2, v7, me p2, v4; III, fe p2, d4, r4, pa p3, r1, ti p2, r2, v9, me p6, r4, v8; IV, fe d3, r3, pa r1, ti p2, r3, v10, me p4, r5, v10; palp, fe p1, d2, pa 0, ti p2, v2.

*Claws.* 5 (inner) to 7 (outer) in each of two rows, long, set high and parallel (I) to 4 in both rows (IV).

*Trichobothria.* Two rows, each of c. 8 for full length of tibiae; c. 11 in curving row on metatarsi; 4 clavate and 14 filiform on tarsi.

*Palp.* Bulb stout pyriform; embolus slender, tapered; retrolateral margin of cymbium convex; slight groove for distal half on ventral tibia.

*Spinnerets.* PMS atrophied, small, distinct; 0.20 long, 0.12 wide, 0.06 apart, c. 0.12 of basal PLS in diameter. PLS length of basal, middle, apical, and total articles 0.80, 0.40, 0.22, 1.42 respectively.

##### ALLOTYPE FEMALE QMS19548

Carapace 7.20 long, 5.53 wide. Abdomen 8.87 long, 4.67 wide. Total length, 18.

*Colour.* Carapace and legs orange brown, chelicerae darker, legs not annulated. Abdomen dorsally brown with large irregular white spots forming 4 paired areas so brown forms her-



ringbone pattern; ventrally pallid with a pair of large brown marks laterally and one medially between posterior booklungs, brown areas around spinnerets and few flecks elsewhere.

**Carapace.** Pilosity: light cover of fine black setae; striae distinct, narrow, darker. Bristles: 4-6 erect black beside posterior striae; c.10 thick anteromedially and many finer in band beside caput; 3 long thick and few finer between PME, and 6 long thick and 3-4 finer between ALE; long brown setae and bristles on lateral margins. Fovea short, procurved.

**Eyes.** Tubercle distinct. Group occupies 0.24 of head-width; front width, back width, length, 52, 67, 58, respectively. Back row slightly procurved. MOQ front width, back width, length, 35, 45, 34, respectively. AME:ALE:PME:PLE, 18:23:18:19. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.7; ALE-PLE, 1.4; PME-PME, 1.2; PME-PLE, 0.1; ALE-ALE, 0.7.

**Chelicerae.** Few long thick and many shorter bristles prodorsally, laterally covered with short setae. Rastellum a low mound with 15-20 short conical bristles along inner edge. Furrow promargin with 8 large, separated teeth mixed with 2 small teeth, basomesally with 6 small teeth and 20-30 granules basally, to c.1/2 furrow length.

**Labium.** 0.70 long, 1.17 wide; glabrous widely oval depression anteriorly, 6 long curved setae behind at crest, several fine setae across back edge. Labiosternal suture a narrow continuous groove.

**Maxillae.** 2.03 long in front, 2.79 long behind, 1.46 wide; with c.110-120 cuspules on low mound in inner angle. Heel narrowed, produced; anterior lobe distinct.

**Sternum.** 3.52 long, 3.17 wide. Sigilla all c.0.5 of their length from margin, oval, small.

	I	II	III	IV	Palp
Femur	4.33	3.73	3.40	4.87	3.20
Patella	3.13	2.87	2.40	2.80	2.13
Tibia	3.13	2.60	2.20	3.80	2.20
Metatarsus	2.00	1.93	2.53	4.20	-
Tarsus	1.33	1.33	1.40	1.60	1.60
Total	13.92	12.46	11.93	17.27	9.13

**Legs.** 1 probable basifemoral thorn on femora I, IV. Thorn spines absent. Preening combs: 1 of 2 setae on retroventral III, IV.

**Scopula.** Metatarsi: I, II, for distal 1/2 (II)-2/3 (I), thin, divided; III, small cluster in distal 1/5; IV, entirely absent. Tarsi: I, II, full, thin, divided by setal band 2-4 wide; III, IV, divided by wide setal band 8-10 wide.

**Spines.** I, fe p1, d4w, pa 0, ti v0, me v1w; II, fe p1, d3w, pa 0, ti p1, v2, me v2; III, fe d3w, r1, pa p3, r1, ti p2, r2, v5, me p5, r3, v8; IV, fe d2w, r1,

pa 0, ti r2, v9, me p4, r4, v8; palp, fe p1, pa 0, ti v3.

**Claws.** 2-4 long (I) to 1-2 short (IV) teeth on outer edges; all of similar size and evident above tufts; tuft diameter slightly greater than tarsi; palpal claw large, bare.

**Trichobothria.** Two rows, each of c.8 for length of tibiae; c.8 on metatarsi in strongly curved row; c.3 small clavate and c.12 filiform on tarsi.

**Spermathecae.** Two, each a single broad lobe.

**Spinnerets.** PMS 0.32 long, 0.14 wide, 0.10 apart, and c.0.24 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 1.24, 0.56, 0.19, 1.99 long, respectively.

#### DISTRIBUTION & HABITAT

Known from Paluma Range, and just south at Mt Halifax, NEQ. At Mt Paluma, the ♂ was taken from a roadside embankment in open forest on eastern slopes of the Paluma Range, at lower altitude than the rainforest. At Mt Halifax, specimens were taken from open forest and heath on the summit (1050m) and rainforest at 950m.

#### ENVENOMATION

The ♂ holotype bit its collector who reported that the reaction was mild and brief.

**Mandjelia qantas** Raven & Churchill, sp. nov.  
(Figs 5D, 5E, 30, 33, 54, Table 4)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Olsen's Caverns, The Caves, NW of Rockhampton, MEQ, 23°11'S, 150°28'E, vine thicket, 3 Sep 1991, RR, QMS19677. Paratypes: ♀, same data but, 23 Oct 1990, QMS17160; ♀, same data, QMS17831; 2 ♀♀, same data, QMS19127; ♀, same data, QMS19678.

#### DIAGNOSIS

Differs from the sympatric *Oziocrypta etna* in having posterior median spinnerets and from all Australian barychelids, save *Idioctis*, in the narrow sternum, being about 1.5 times longer than wide.

Small, carapace c.5-6 long, 20-40 cuspules on maxillae, PMS well developed. Rastellum a distinct mound with many conical spines. Preening combs on III, IV. Lateral eye ratio c.1.3. Scopula for length of metatarsi I, only in distal 1/3 on II. Abdomen with mottling dorsally. FEMALES. Basifemoral thorns on I, II, IV. Comb of strong setae distally on prolateral face of femora III, IV. Spermathecae two, each a low inner mound with long outer lobe. Paired claws with 1 tooth (I) or

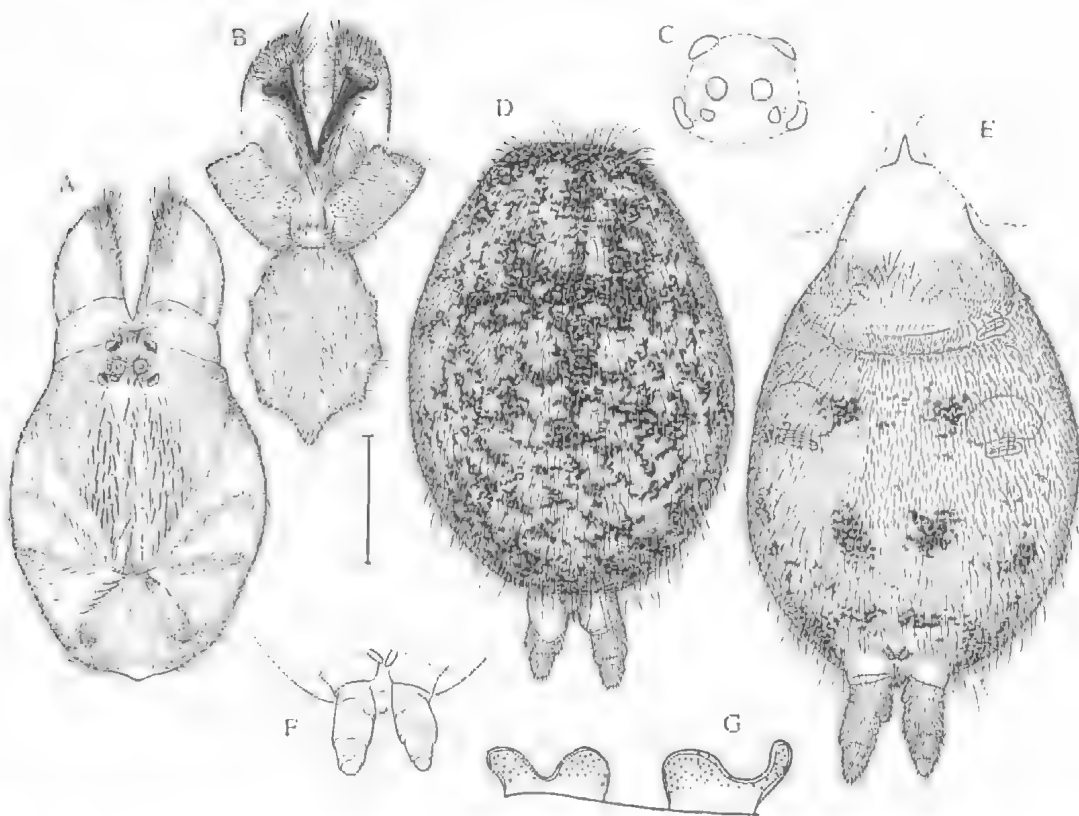


FIG. 54. *Mandjelia qantas* sp. nov., ♀ (Holotype QMS19677). A, carapace & chelicerae, dorsal view; B, sternum, maxillae, labium & chelicerae, ventral view; C, eye group, dorsal view; D, E, abdomen, dorsal (D), ventral (E); F, spinnerets, ventral view; G, spermathecae. Scale line = 2mm (A, B); 1mm (C-F); 0.5mm (G).

bare (IV); palpal claw small, bare; palpal tarsi aspinose. MALES. Unknown.

#### ETYMOLOGY

From QANTAS, for support to the XII International Congress of Arachnology, Brisbane, 1992.

#### DESCRIPTION

##### HOLOTYPE FEMALE QMS19677

Carapace 5.06 long, 3.88 wide. Abdomen 6.38 long, 4.50 wide. Total length, 13.

**Colour.** Carapace, chelicerae, and legs yellow brown, eye region darker; lateral femora I, II, pallid. Abdomen dorsally white with irregular brown mottling; ventrally pallid with pair of brown marks on inner edge of posterior book-lung covers and in front of spinnerets.

**Carapace.** Bristles: 3 bands of long erect black on caput from eyes to fovea; one anteromedial line of c.10 and two lateral bands, each of 8-10 long thick and many shorter black; 1-2 long and

many finer black along edge of posterior striae; fine brown hairs on margins; generally with light pile of hair; striae distinct, narrow, bordered by line of dark hair; 6 long thick and several finer between PME, and 7 long thick and some finer between ALE; 2 pairs of long fine arise from fovea. Fovea short, distinctly procurved.

**Eyes.** Group occupies 0.25 of head-width; front width, back width, length, 32, 40, 31, respectively. Back row slightly recurved. MOQ front width, back width, length, 23, 24, 15, respectively. AME:ALE:PME:PLE, 10:10:5:12. Eye interspaces: AME-AME, 0.5; AME-ALE, 1.0; ALE-PLE, 1.1; PME-PME, 1.6; PME-PLE, 0.3; ALE-ALE, 1.5.

**Chelicerae.** 10-12 long black and many shorter bristles prodorsally in well defined band, laterally an area of short fine setae. Rastellum a distinct mound with 30-40 short strong conical spines clustered medially but also across to outer edges of fang. Furrow promargin with seven strong

separated teeth, basomesally with 8 small teeth and two rows of 10-12 fine granules.

**Labium.** 0.40 long, 0.96 wide; 6 thick setae behind ridge with glabrous zones in front and behind, few setae along posterior margin. Labiosternal suture a broad continuous groove.

**Maxillae.** 1.28 long in front, 2.00 long behind, 0.92 wide; with c. 24-30 cuspules in inner angle, not on mound. Heel broad, rounded, incurved over labium; anterior lobe small, distinct.

**Sternum.** Narrow, 3.20 long, 2.20 wide. Sigilla all oval, submarginal.

**Legs.** 1-5 basifemoral thorns on II, IV. Metatarsi I, II, very short. Strong comb of thorn setae prolaterally on distal femora III, IV and adjacent patellar surfaces. Setation on legs generally strong dark bristles. Preening combs: 1 of 4 strong setae on retroventral III, IV; 1 of two weak setae on proventral III, IV.

	I	II	III	IV	Palp
Femur	2.40	2.32	2.40	3.08	1.92
Patella	1.92	1.88	1.68	2.20	1.32
Tibia	1.56	1.44	1.28	1.76	1.00
Metatarsus	0.92	1.00	1.68	2.68	-
Tarsus	0.84	0.80	0.92	1.16	1.00
Total	7.64	7.44	7.96	10.88	5.24

**Scopula.** Metatarsi: I, full, thin, entire; II, distal 1/3, very thin; III, IV, reduced to small distal cluster of hairs. Tarsi: I, II, full, thin, divided by setal band 2-3 wide; III, IV, thin, divided by setal band 6-8 wide.

**Spines.** I, fe p1 d5w, pa 0, ti 0, me v1 + 2 paired distal; II, fe p1, pa 0, ti 0, me p1w, v2 + 2 paired distal; III, fe r1, pa p3, r1, ti p2, r1, v3 + 1w, me p4, r5, v5; IV, fe r1w, pa p1 r1, ti r2, v9, me p4, r4, v6; palp, fe 0, pa 0, ti v3 + 2w.

**Claws.** 1 tooth (I) or bare (IV, palp). All paired claws of similar size; palpal claw c.2/3 size of tufts and paired claws.

**Trichobothria.** Two rows, each of c.6 for half of tibiae; c.6 on metatarsi in diagonal row; c.10 filiform on tarsi.

**Spermathecae.** Two, each a low inner mound with longer slender outer lobe.

**Spinnerets.** PMS well developed, 0.32 long, 0.08 wide, 0.17 apart, and c. 0.13 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 0.90, 0.28, 0.08, 1.26 long, respectively.

#### DISTRIBUTION, BURROW & HABITAT

Narrow band of vine thicket near the entrance to the limestone cave complex extending through Olsen's Caverns to Mt Etna. The ♀♀ were taken from shallow burrows about 4-6 cm deep. No side shafts were evident. The door was thin and the

entire chamber lined with bright white silk. The burrows were found beside roots and rocks.

#### REMARKS

*M. qantas* is one of the few species in this paper in which the third leg is longer than the first.

***Mandjelia rejae* Raven & Churchill, sp. nov.**  
(Figs 32, 55, Table 3)

#### MATERIAL EXAMINED

TYPE. Holotype ♂, Mt Halifax, taken in pitfall traps in rainforest at summit of 1050m, NEQ, 19°07'S 146°23'E 19-21 Mar 1991, GBM, DC, QMS17837.

#### DIAGNOSIS

Differs from the sympatric *M. paluma* in the cap-like posterior median spinnerets.

Medium-sized, carapace c.7 long, 60-80 cuspules on maxillae. PMS minute, two small caps. Rastellum absent. Preening combs only on III. Lateral eye ratio c.1. Scopula in distal 1/2-1/3 of metatarsi I, II. Abdomen with mottling dorsally. MALES. Tibia I distally with low conical spur apically with angular megaspine; microspur only a low red mound bearing short, straight, laterally directed megaspine. Bulb simple, pyriform; embolus a gradually tapered cone without keels, slightly sinuous tip; retrolateral face of cymbium straight. Claws with 2 rows of few teeth. FEMALES. Unknown.

#### ETYMOLOGY

From the initials of Professor Rhondda E. Jones, Zoology Department, James Cook University, Townsville, in recognition of her enthusiasm for ecology and for encouraging the junior author to direct her initial interest from reptiles to spiders at the start of her post-graduate career.

#### DESCRIPTION

HOLOTYPE MALE QMS17837

Carapace 7.25 long, 5.94 wide. Abdomen 8.13 long, 4.50 wide. Total length, 17.

**Colour.** Carapace mottled green brown with paler anterior striae, chelicerae brown, legs brown, not annulated. Abdomen dorsally brown with small white mottling irregularly defining narrow brown chevrons laterally; ventrally pallid with light brown area between posterior book-lung covers, longitudinally on medial line, and two irregular transverse bands in front of spinnerets and just anterior to that.

**Carapace.** Bristles: light pile of long wavy silver hairs; many short black in lines on inter-

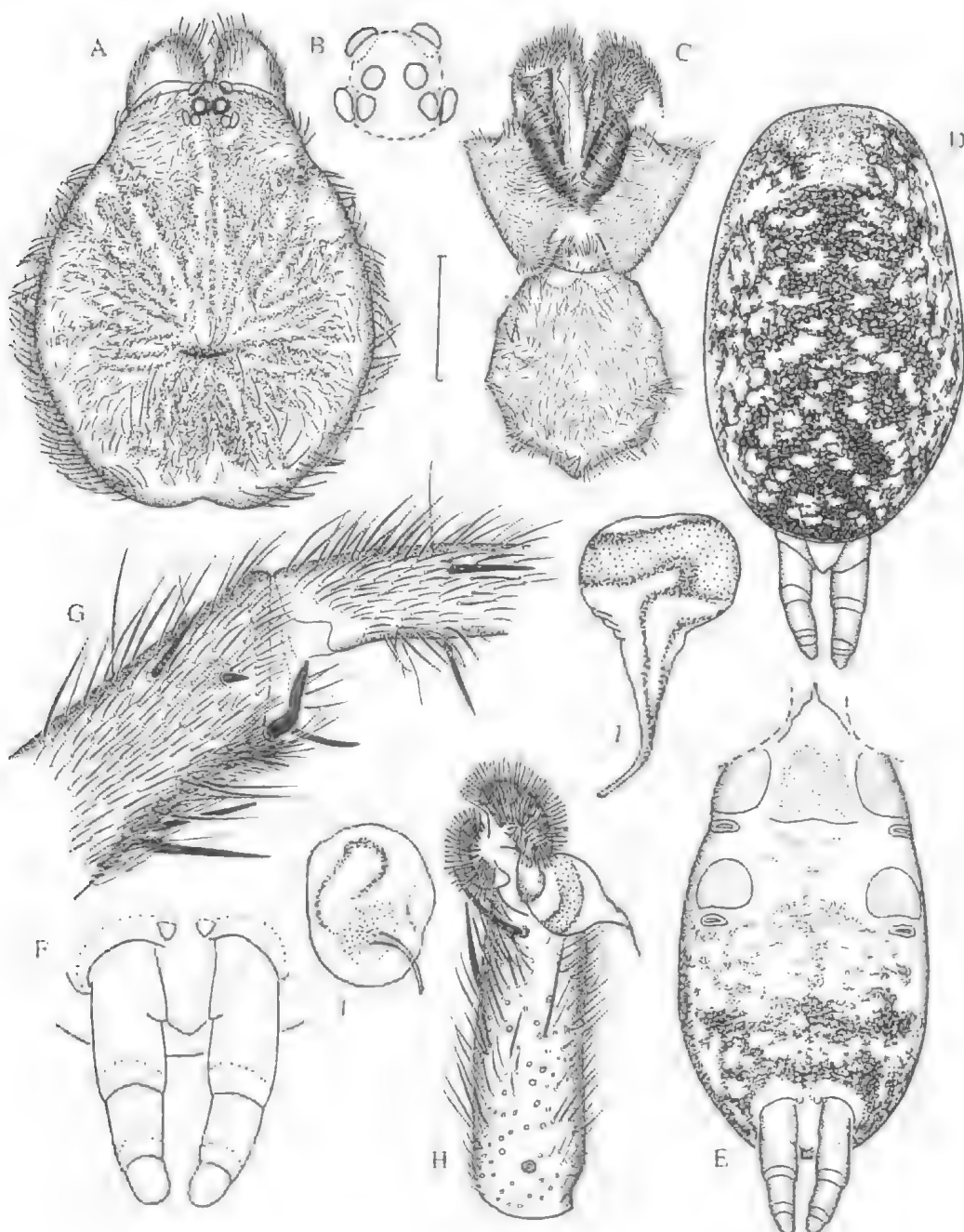


FIG. 55. *Mundjelia regae* sp. nov., holotype ♂ (QMS17837). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, sternum, maxillae & labium, ventral view; D, E, abdomen, dorsal (D), ventral view (E); F, spinnerets, ventral view; G, tibia & metatarsus I, prolateral view; H, palpal tibia, cymbium & bulb, ventral view; I, J, palpal bulb, retrolateral (I) & axial views (J). Scale line = 2mm (A, C-E); 1mm (B, F-H); 0.5mm (I, J).

strial ridges; striae indistinct, narrow, save anterior paler; c.7 erect black beside posterior striae; 15-20 anteromedially, no band of thick beside caput; 3 long thick and few fine between PME, and 5 long thick and 2-3 fine between ALE; lateral margins with light pile of long silver hairs and single band of strong curved black bristles. Fovea short, procurved.

**Eyes.** Tubercle distinct. Group occupies 0.25 of head-width; front width, back width, length, 31, 41, 33, respectively. Back row procurved. MOQ front width, back width, length, 21, 27, 21, respectively. AME:ALE:PME:PLE, 8:12:10:12. Eye interspaces: AME-AME, 0.8; AME-ALE, 1.0; ALE-PLE, 1.5; PME-PME, 1.6; PME-PLE, 0.3; ALE-ALE, 1.4.

**Chelicerae.** Wide band of long bristles and silver hairs prodorsally, laterally few setae between narrow setal bands. Rastellum and mound absent, few long curved bristles on margin. Furrow promargin with 7 spaced teeth, basomesally with 8-10 granules.

**Labium.** 0.48 long, 1.20 wide; strong bristles on leading edge and 8-10 along back edge; otherwise central band glabrous. Labiosternal suture two wide sigilla joined medially.

**Maxillae.** 2.00 long in front, 2.60 long behind, 1.04 wide; with c.60-80 cuspules in inner angle, not on mound. Heel angular; anterior lobe indistinct.

**Sternum.** 3.60 long, 3.12 wide. Sigilla: posterior, narrow, oval, 0.37 long, in shallow depression, submarginal, 0.20 from margin; others oval, marginal.

	I	II	III	IV	Palp
Femur	5.56	5.00	4.75	5.94	3.25
Patella	3.44	3.25	2.63	2.69	2.19
Tibia	4.31	3.75	3.19	5.19	2.69
Metatarsus	3.75	3.25	3.94	6.44	-
Tarsus	1.94	1.88	1.94	2.25	1.38
Total	19.00	17.13	16.45	22.51	9.51

**Legs.** Tibia I distally with low conical spur apically with angular megaspine; microspur only a low red mound bearing short, straight, laterally directed megaspine. Basifemoral thorns, and thorn spines absent. Preening combs: a pair of spines on retroventral metatarsi III.

**Scopula.** Scopulate surfaces pallid. Metatarsi: I, II, distal 1/3-1/2, thin, entire; III, only 30-40 hairs in two small distal groups; IV, absent. Tarsi: I, II, hairs short, thin, divided by setal band 1-2 (I) or 4-6 (II) wide; III, thin, divided by setal band 6-8 wide; IV, thin, lateral, divided by setal band cover ventral surface.

**Spines.** I, fe p2, d5, pa 0, ti p2 + megaspine, v3 + megaspine, me p2, v2; II, fe p2, d3, pa 0, ti p3,

v7, me p3, v5; III, fe p2, d3, r3, pa p2, r1, v1, ti p2, r3, v5, me p4, r4, v6; IV, fe d3, r2, pa v1, ti p3, r4, v9, me p4, r4, v10; palp, fe p1, d3, pa 0, ti p4, v6.

**Claws.** Two scooped rows, each of 4-6 (outer) long teeth on leg I; 3 teeth in each of 2 slightly flared rows on leg IV.

**Trichobothria.** Two rows, each of c.8 for full length of tibiae; c.13 on metatarsi in disordered curving row; c.4 small clavate and c.15 filiform on tarsi.

**Palp.** Bulb simple, pyriform; embolus a gradually tapered cone without keels, slightly sinuous tip; retrolateral face of cymbium straight.

**Spinnerets.** PMS reduced to hirsute, triangular or domed cap; 0.10 long, 0.10 wide, 0.20 apart, and about 0.18 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.13, 0.50, 0.35, 1.98 long, respectively. No enlarged spigots.

#### DISTRIBUTION & HABITAT

Rainforest at the summit of Mt Halifax, near Townsville, NEQ, at 1050m.

#### REMARKS

Just 100m lower in open forest a second 'widespread' species, *M. paluma*, occurs. A penultimate ♂ of *M. paluma* was also taken from rainforest near the type of *M. rejae*.

#### *Mandjelia thorelli* (Raven) n. comb.

(Figs 2H, 5F, 5G, 6F, 16E, 30, 33, Table 4)

*Tritlame thorelli* Raven, 1990, p. 43, n. comb.

#### DIAGNOSIS

Differs from *M. paluma* in more widely trapezoidal eye group and more numerous cuspules.

PMS small, distinct. Maxillae with c.100 cuspules. FEMALES. Basifemoral thorns absent. Scopula on metatarsi III in two small clusters in distal 1/4; none on IV. Palpal claw slightly smaller than tuft.

#### DISTRIBUTION, HABITAT & BURROW

Rainforest and vine thickets at Crediton, Mt William, and Finch Hatton, in the Eungella region, MEQ. ♀♀ make short (5-8cm) straight tubes of thin web under leaf litter. The tube extends just above the ground and has a thin door.

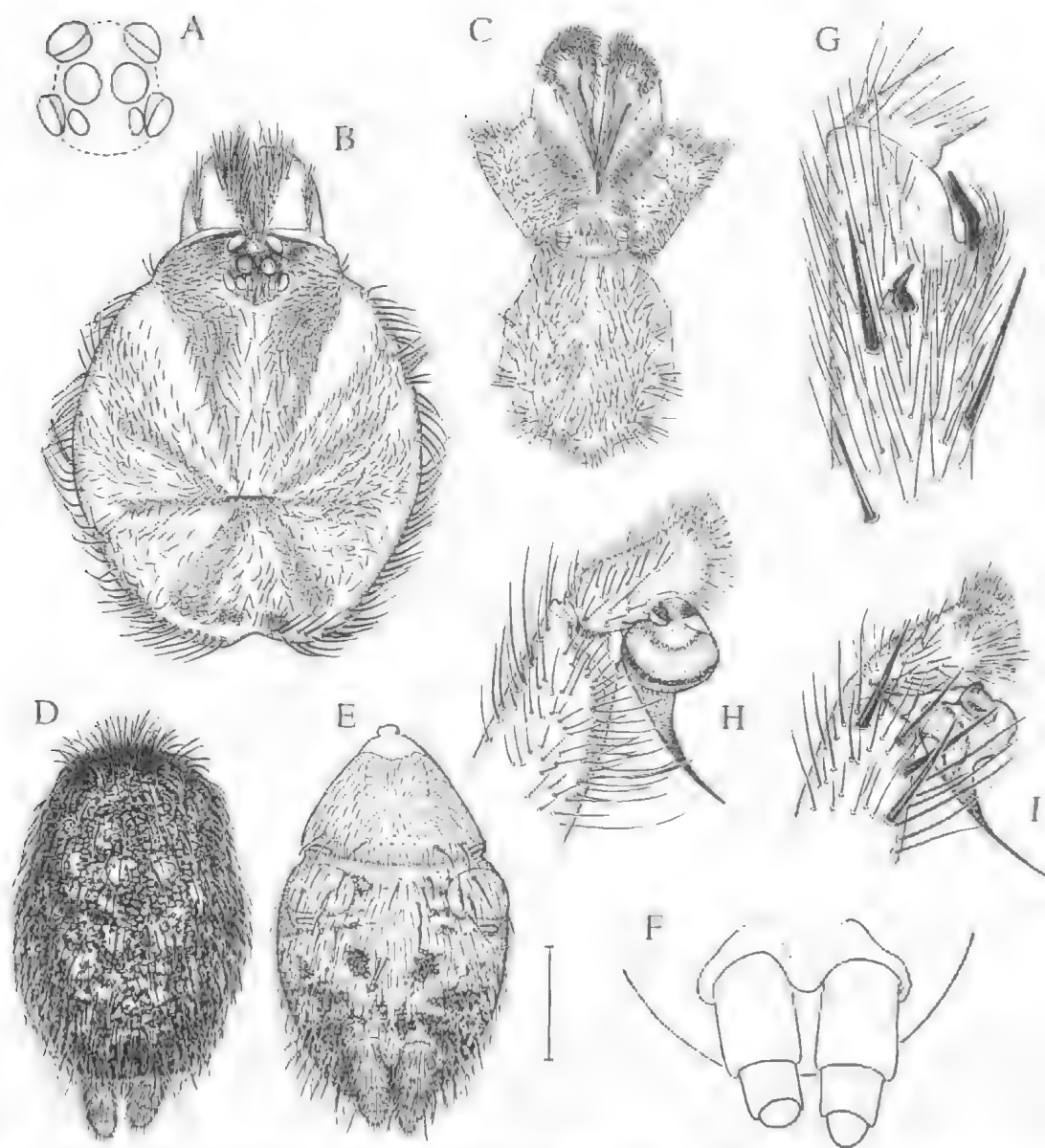


FIG. 56. *Mandjelia wooroonooran*, holotype ♂ (QMS7694). A, eye group, dorsal view; B, carapace & chelicerae, dorsal view; C, sternum, maxillae & labium, ventral view; D, E, abdomen, dorsal (D), ventral view (E); F, spinnerets, ventral view; G, tibia & metatarsus I, prolateral view; H, I, palpal bulb, prolateral (H), retrolateral view of left palp (I). Scale line = 1.4mm (B-E); 0.7mm (A, F); 0.35mm (G-I)

#### REMARKS

Raven (1990)'s cladogram placed *Trittame thorelli* as the most plesiomorphic species of *Trittame* because it was the only species of *Trittame* to have biserial dentition of ♂♂ claws. That hypothesis is not violated in transferring the species to *Mandjelia* where the microstructure of its cuspsules is similar to congeners.

***Mandjelia wooroonooran* Raven & Churchill,**  
sp. nov.  
(Figs 31, 32, 56, 57, Table 3)

#### MATERIAL EXAMINED

YPES. Holotype ♂, Bellenden Ker Range, Cable Tower 3, 1054m, 17°16'S 145°51'E, 25-31 Oct 1981, Earthwatch-Queensland Museum expedition.



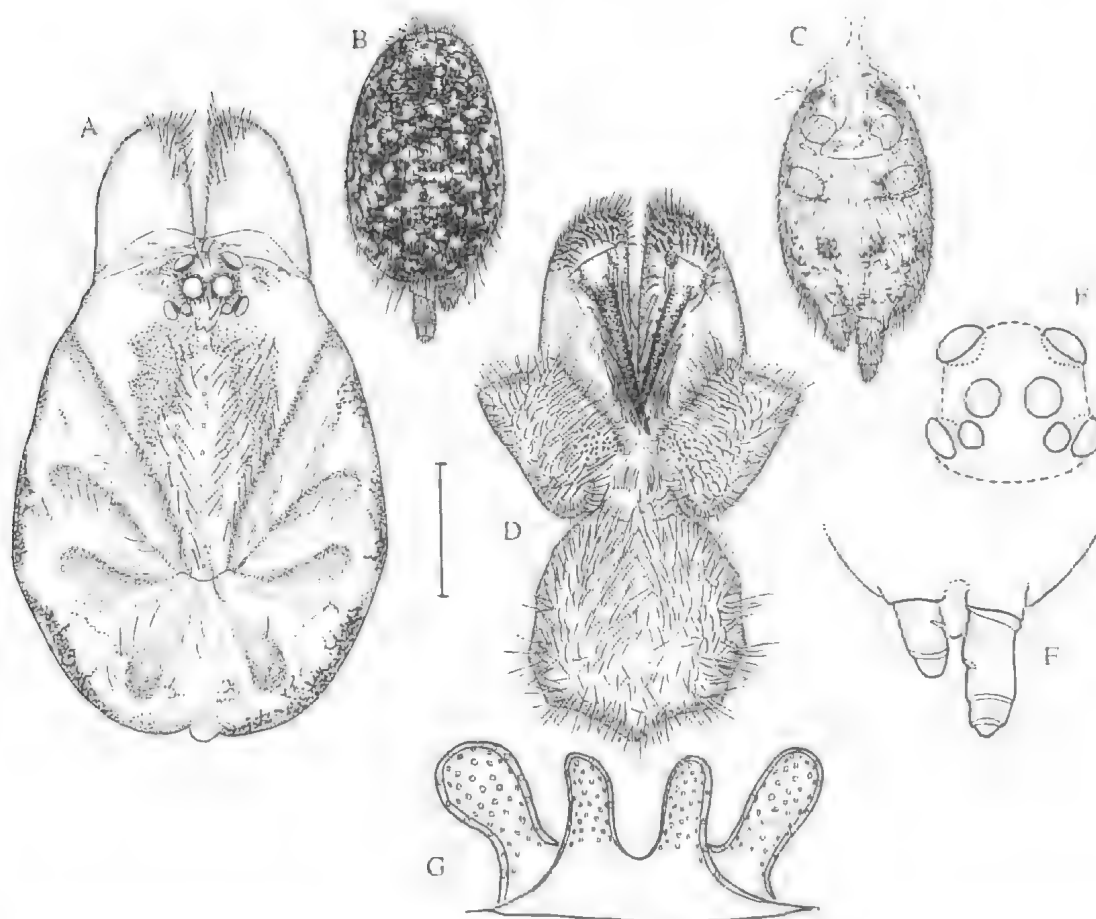


FIG. 57. *Mandjelia wooroonooran* sp. nov., allotype ♀ (QMS7690): A, carapace & chelicerae, dorsal view; B, C, abdomen, dorsal (B), ventral (C); D, sternum, maxillae, labium & chelicerae, ventral view; E, eye group, dorsal view; F, spinnerets, ventral view; G, spermathecae. Scale line = 1mm (A, D, F); 2.5mm (B, C); 0.5mm (E); 0.25 (G).

QMS7694, Paratypes: ♀ allotype, same data, QMS7690; 3 ♀♀, same data QMS19131; 2 ♀♀, same data, QMS9669; 1 ♀, same data but, summit, 1560m, 25-31 Oct 1981, QMS7697; 1 ♀, same data but 0.5km S of Cable Tower 7, rainforest at 500m, 1-7 Nov 1981, QMS9655; 6 ♂♂, same data but, 17-24 Oct 1981, QMS9645; 1 ♂, Massey Ra, 6km NW Centre Peak Bellenden Ker, 17°14'S 145°48'E rainforest at 1150m, 11-12 Oct 1991, GBM, HJ, DC, QMS19129. All in NEQ.

OTHER MATERIAL. Juveniles taken with types.

#### DIAGNOSIS

Males differ from those of *M. commoni* in the subapical spur and longer embolus and from those of *M. fleckeri* in having the sub-distal cross-section of the embolus distally cylindrical to triangular but without keels, and less extensive

scopula on metatarsi I and II. Both ♂♂ and ♀♀ also differ from *M. fleckeri* in lacking distinct paired bands dorsally on the abdomen and in having the eye group clearly narrower in front than behind.

Small, carapace c.4-5 long. 30-60 cuspules on maxillae. PMS absent, reduced to paired or unpaired setose cap in ♀♀. Rastellum absent. Preening combs weak to absent. Lateral eye ratio c.1. Scopula in distal 1/2-1/3 of metatarsi I, II. Abdomen with maculate dorsally. FEMALES. Basifemoral thorns and thorn spines absent but comb of strong setae on femora III, IV. Spermathecae four, each a pair of short lobes discharging separately, inner lobes slender, outer lobes broader with slightly enlarged apex. Paired claws dentate; palpal claw bare; palpal tarsi

aspinose. MALES. Tibia I with long conical spur and long angular megaspine; spur set well back from distal tibia, the separation marked by less coloured (and less sclerotised) cuticle; prolateral tibia with short thumb-like microspur set against moderately long curved megaspine. Bulb pyriform, embolus tapers to fine point; retrolateral face of cymbium concave. Claws with two rows, each of few teeth.

#### ETYMOLOGY

From an Aboriginal word for Mt Bellenden-Ker (Meston, 1889), the type locality.

#### DESCRIPTION

##### HOLOTYPE MALE QMS7694

Carapace 5.53 long, 4.24 wide. Abdomen 4.40 long, 2.56 wide. Total length, 11.

**Colour.** Carapace orange brown with brown mottling in interstitial ridges and on caput, legs similar, chelicerae darker, sternum and coxae ventrally yellow brown. Abdomen dorsally brown with small irregular paired white spots; ventrally pallid with brown crescents near book-lungs, two brown patches centrally, and brown areas posteriorly near spinnerets.

**Carapace.** Uniform cover of fine silver hairs, more numerous near margins; and fine black bristles becoming thicker on clypeus, thickest on margins. No bristles on edge of carapace front margin. Fovea short, slightly procurved. Striae distinct. Line of bristles anteromedially; 4-6 between ALE and PME.

**Eyes.** Back row slightly procurved. Group occupies 0.35 of head-width; front width, back width, length, 37:42:36. MOQ front width, back width, length, 15:19:11. AME:ALE:PME:PLE, 11:14:7:13. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.6; ALE-ALE, 1.2; PME-PLE, 0.2; PME-PME, 1.1; ALE-PLE, 1.3.

**Chelicerae.** Slender, two rows of short brown bristles on dorsal and lateral margins. Rastellum absent. Furrow promargin with 6 large and 3 smaller teeth, basomesally with 3 fine granules.

**Labium.** 0.72 wide, 0.32 long; 2-3 thick and few finer setae centrally. Separated from sternum by broad continuous groove.

**Maxillae.** 1.37 long in front, 1.84 long behind, 0.76 wide. Anterior lobe short, distinct; heel angular; c.45-55 blunt cuspsules in inner angle of maxillae.

**Sternum.** 2.76 long, 2.35 wide. Broad, with few fine setae near lateral margins; posteriorly with long thick setae. Sigilla small, oval, marginal.

**Legs.** Generally covered with long brown setae; no silver hairs evident. Tibia I with long conical spur and long angular megaspine; spur set well back from distal tibia, the separation marked by less coloured (and less sclerotised) cuticle; prolateral tibia with short thumb-like microspur set against moderately long curved megaspine. Preening combs and thorn spines absent.

**Scopula.** Metatarsi: I, II, in distal 1/2, proximally divided by setae, thin; III, few scattered setae in 2 distal triangles; IV, even more sparse. Tarsi: I, II, full, entire, thin; III, full but with medial band of thicker hair (not setae as in IV) not parting scopula; IV, thin, divided by setal band 3-4 wide.

	I	II	III	IV	Palp
Femur	3.76	3.52	3.36	4.93	2.60
Patella	2.48	2.24	1.76	2.33	1.52
Tibia	2.88	2.80	2.40	4.13	1.96
Metatarsus	2.88	2.48	2.96	5.00	-
Tarsus	1.76	1.68	1.60	2.20	1.04
Total	13.76	12.72	12.08	18.59	7.12

**Spines.** I, fe p1, d5, pa 0, ti p1+2 megaspines, v5, me p1, v1; II, fe p2, d4, pa 0, ti p2, v6, me p1, v1; III, fe p2, d3, r2, pa p4, r1, ti p2, r3, v9, me p4, r3, v7; IV, fe p1, d5, r3, pa r1, ti p2, d1, r4, v10, me p4, r5, v10; palp, fe p1, d4, pa 0, ti p1, v3.

**Claws.** 6 teeth in each of 2 parallel rows set high and medially on the claws (I); on leg IV, similar in size and dentition but 5 in outer rows and 2 in inner rows.

**Palp.** Cymbium divided into two unequal lobes. Bulb pyriform with gradual embolic origin; long embolus tapers gradually to fine point. Retrolateral face of cymbium concave.

**Trichobothria.** Two rows, each of c.8 extending to 3/4 of tibiae; c.12 in curving row on metatarsi; c.4-5 clavate and 12-15 filiform in two divided groups on tarsi.

**Spinnerets.** PMS entirely absent. PLS length of basal, middle, apical, and total articles 0.68, 0.24, 0.20, 1.12, respectively.

##### ALLOTYPE FEMALE QMS7690

Carapace 3.53 long, 2.93 wide. Abdomen 3.93 long, 2.20 wide. Total length, 9.

**Colour.** Carapace yellow brown with brown areas on lateral margins and on caput, chelicerae and legs yellow brown. Abdomen dorsally brown with mottling forming slight herringbone pattern posteriorly; ventrally pallid with brown areas between posterior book-lungs, centrally, and in front of spinnerets.

**Carapace.** Pilosity: few fine grey hairs on interstitial ridges and caput; a pair of fine foveal bristles, line of 8-10 slender anteromedial

bristles, one long black bristle beside posterior striae; three thick bristles between PME and three thick and 5-7 finer between ALE; lateral margins with few fine hairs; striae wide, shallow indistinct. Fovea procurved.

**Eyes.** Tubercle a low mound. Group occupies 0.40 of head-width. Back row straight. Group front width, back width, length, 32:39:30, MOQ front width, back width, length, 21:26:16. AME:ALE:PME:PLE, 8:12:6:11. Eye interspaces: AME-AME, 0.6; AME-ALE, 0.9; ALE-ALE, 1.5; PME-PLE, 0.1; PME-PME, 1.6; ALE-PLE, 1.6.

**Chelicerae.** Small; light cover of long and short black bristles; lateral band of short bristles. Rastellum a low but distinct mound armed with 8 thick short curved spines on inner corners and 4-6 laterally overhanging fang joint. Furrow promargin with 6 moderately large and 2 smaller teeth all well separated, basomesally with 3 small teeth and 6-8 fine granules.

**Labium.** 0.76 wide, 0.40 long; 8 thick setae in band centrally. Labiosternal suture two sigilla, laterally wide medially narrow at join.

**Maxillae.** 0.86 long in front, 1.17 long behind, 0.67 wide; with c. 30-32 cuspules in inner corner. Heel broad, rounded; anterior lobe indistinct.

**Sternum.** 1.84 long, 1.60 wide. Sigilla small, marginal.

**Legs.** Prolateral surface of patellae and tibiae lacking long erect bristles (as dorsally present) with uniform light cover of short hairs. Thorn spines absent but group of thicker setae on distal femora and proximal patellae III, IV. Preening combs: two separated (III) or three grouped retroventrally. Basifemoral thorns absent.

	I	II	III	IV	Palp
Femur	2.09	1.68	1.62	2.66	1.59
Patella	1.48	1.33	1.08	1.53	1.08
Tibia	1.45	1.27	0.89	1.80	0.95
Metatarsus	1.03	0.98	1.30	2.33	—
Tarsus	0.81	0.86	0.98	1.20	1.02
Total	6.86	6.12	5.87	9.52	4.64

**Scopula.** Metatarsi: I, II, very thin, ventrally in distal 1/2-1/3 (II), divided widely by setal band 2-3 wide; absent on III, IV. Tarsi: I, II, full, thin, divided by setal band 2-3 wide; III, thin, almost full length, widely divided by setal band 6-8 wide; IV, in distal half, very thin, setal band wider than scopula bands and with more setae than each scopula band has hairs.

**Spines.** I, fe p1w, d6w, pa 0, ti 0, me v2; II, fe p1w, d6w, pa 0, ti v2, me v2; III, fe d4w, r1w, pa p2, ti p2, d1, r1, v8, me p3, r2, v11; IV, fe d4w, r1w, pa 0, ti r2, v7, me p2, r3, v12; palp, fe d5w, pa 0, ti v4.

**Claws.** 2 (IV) to 3 (I) small teeth; palpal claw slightly smaller than leg claws, bare.

**Trichobothria.** Two rows, each of c. 8 for c. 0.6 length of tibiae; c. 10 in curving row on metatarsi; no clavate, c. 11 filiform on tarsi.

**Spermathecae.** Four, each a pair of short lobes discharging separately, inner lobes slender, outer lobes broader with slightly enlarged apex.

**Spinnerets.** PMS absent, reduced to paired or unpaired setose cap in ♀♀. PLS length of basal, middle, apical, and total articles 0.56, 0.24, 0.05, 0.85, respectively.

#### DISTRIBUTION, HABITAT & BURROW

Rainforest from 500-1560m on Mt Bellenden-Ker and NW along Massey Range, NEQ. The label with the one specimen noted only 'trapdoor in the soil'.

*Mandjelia wyandotte* Raven & Churchill, sp. nov.  
(Figs 32, 58, Table 4)

#### MATERIAL EXAMINED

TYPE, Holotype ♀, Wyandotte Ck - Eight Mile Ck, between Mt Garnet and Greenvale, [18°47'S 144°49'E], NEQ, open forest, KRM, 8 Nov 1979, QMS18369; ♀ paratype, same data, QMS18370.

#### DIAGNOSIS

Females differ from those of *M. banksi* in the subquadrate eye group and the distinct preening combs.

Large spiders, carapace length c.10. 50-70 cuspules on maxillae, not on mound. PMS very small. Rastellum absent. Preening combs on III, IV. Lateral eye ratio c.1. Scopula for length of metatarsi I, II. Abdomen with herringbone pattern dorsally. FEMALE. Basifemoral thorns on I, II, IV. Thorn spines absent. Spermathecae four lobes, each lobe short with slight apical enlargement. Paired claws dentate or edentate; palpal claw bare; palpal tarsi aspinose. MALES. Unknown.

#### ETYMOLOGY

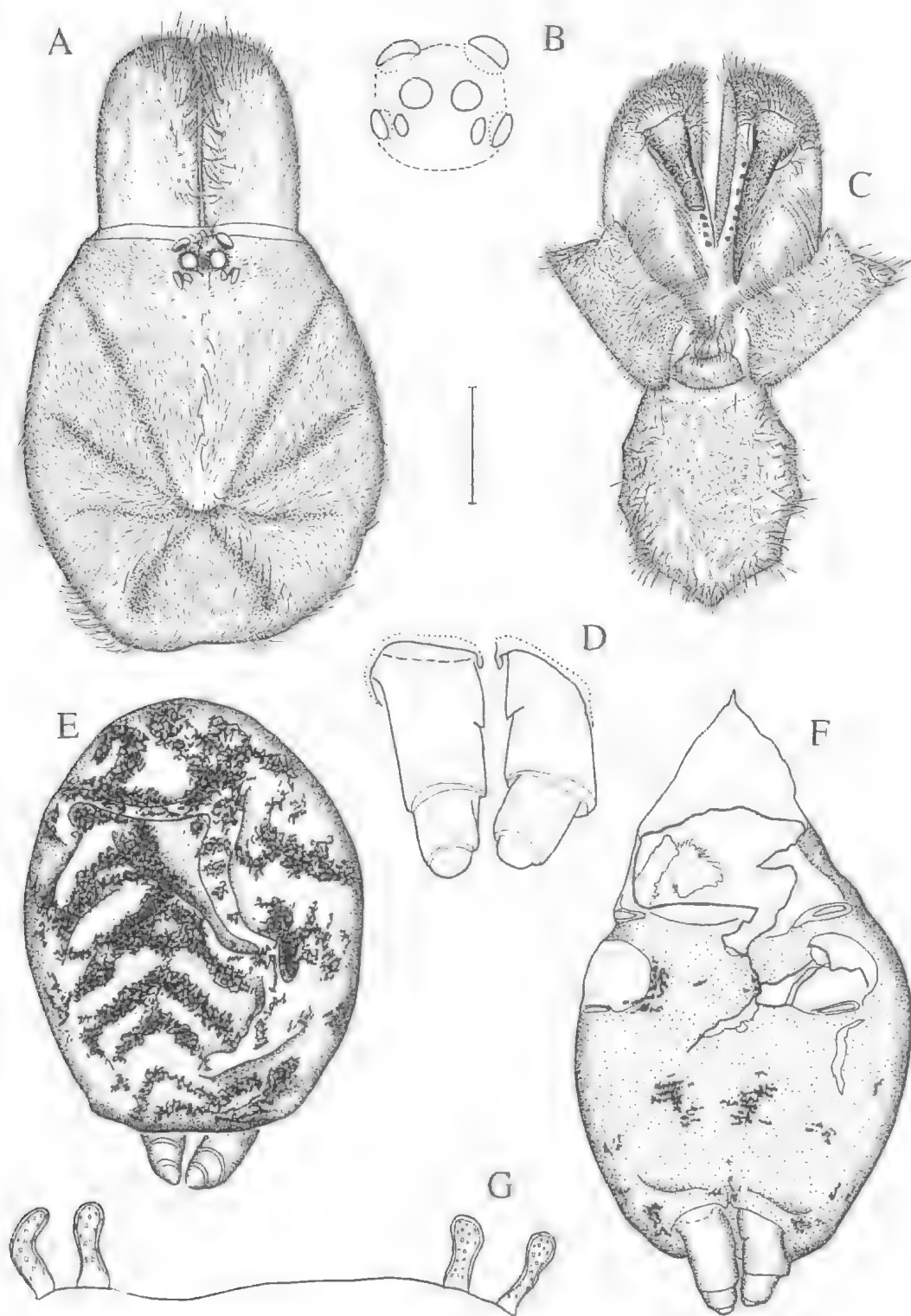
From the name of the type-locality.

#### DESCRIPTION

##### HOLOTYPE FEMALE QMS18369

Carapace 10.40 long, 10.10 wide. Abdomen damaged.

**Colour.** Carapace and chelicerae orange brown, legs yellow brown without annulations. Abdomen damaged, subadult with holotype has five paired oval diagonal bands forming brown herringbone pattern dorsally, and ventrally pallid



with paired brown areas in inner edge of posterior booklungs and centrally, and brown area in front of spinnerets.

**Carapace.** Pilosity: uniform cover of fine black bristles and silver hairs; posterior and middle pairs of striae indistinct, shallow. Bristles: 6-8 erect black beside posterior striae; 3-4 foveal pairs; 8-10 black posteriorly directed anteromedially and few shorter beside caput; 5 long thick and few fine between PME, and 8 long thick and 6-8 fine between ALB; short hairs and fine brown bristles on lateral margins. Fovea short, distinctly procurved.

**Eyes.** Tubercle distinct. Group subquadrate, occupies 0.25 of head-width; front width, back width, length, 54, 63, 49, respectively. Back row straight. MOQ front width, back width, length, 39, 44, 30, respectively. AME:ALE:PME:PLE, 18:19:12:15. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.8; ALE-PLB, 1.3; PME-PME, 1.4; PME-PLE, 0.1; ALE-ALE, 1.3.

**Chelicerae.** Wide bands of long bristles and short hairs prodorsally, laterally a lightly setose zone of shorter bristles then dense band and another lightly setose zone. Rastellum absent, group of many weak bristles overhang fang. Furrow promargin with 9 spaced teeth, basomesally with 10 small teeth.

**Labium.** 1.00 long, 2.13 wide; a band of few thick bristles with several fine behind them. Labiosternal suture a narrow groove of two separated sigilla.

**Maxillae.** 3.75 long in front, 5.13 long behind, 2.25 wide; with c.50-70 cuspules in inner angle, mound not evident. Heel angular; anterior lobe acute, well defined.

**Sternum.** 5.88 long, 4.75 wide. Sigilla small marginal.

**Legs.** Basifemoral thorns: 2-6 on I, II, IV. Thorn spines absent. Preening combs: 1 of 3 setae on retroventral III, IV.

	I	II	III	IV	Palp
Femur	7.50	6.88	6.63	9.13	5.75
Patella	5.88	5.25	4.38	5.00	3.75
Tibia	5.63	4.88	4.38	7.38	3.88
Metatarsus	4.75	4.13	5.25	7.75	-
Tarsus	2.75	2.63	2.88	3.75	3.00
Total	26.51	23.77	23.52	33.01	16.38

**Scopula.** All hairs long. Metatarsi: I, II, full, dense, entire; III, IV, two narrow bands in distal 1/3 (III)-1/5 (IV). Tarsi: I, II, full, dense, entire, save for single line of setal in distal 1/2 of II; III,

divided by setal band 2-6 wide, band widest proximally but distally setae more numerous; IV, divided by setal band 4-6 wide.

**Spines.** I, fe p1, d5, pa 0, ti p2, v5w, me v5; II, fe p1, d4, pa 0, ti p2, v4w, me p1, v5; III, fe p2, d5, r3, pa p4, r1, ti p3, r3, v10, me p4, r3, v10; IV, fe d5, r2, pa r1, ti p2, r4, v10, me p3, r6, v11; palp, fe p1, pa 0, ti p2, v7.

**Claws.** 1 large and 1 small tooth in medial keel (I); on leg IV with 1 tooth or bare; palpal claw small, c.2/3 size of tufts, bare.

**Trichobothria.** Two rows, each of c.15 for length of tibiae; c.20 on metatarsi in curving row; c.5 clavate and c.15-20 filiform on tarsi.

**Spermathecae.** Four lobes, each lobe short with slight apical enlargement.

**Spinnerets.** PMS very small, 0.19 long, 0.10 wide, 0.10 apart, and c.0.11 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.33, 0.67, 0.19, 2.19 long, respectively.

#### DISTRIBUTION & HABITAT

Wyandotte Ck, between Mt Garnet and Charters Towers, NEQ. The creek margins are poorly vegetated where the creek crosses the highway and are subjected to flash flooding to a depth of 1-2 m. The area is rolling open grassland with widely spread eucalypts and is used for grazing cattle.

**Mandjelia yuccabine** Raven & Churchill, sp. nov.  
(Figs 32, 59, Table 3)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Yuccabine Ck, 18°13'S 145°45'E, NEQ, simple notophyll vineforest (rainforest), 8 Nov 1989, KRM, QMS19040.

#### OTHER MATERIAL EXAMINED

juv., Walkers Ck, SW Townsville, NEQ, in soil near *Selenotypus* burrow, 29 Aug 1987, RR, QMS1980.

#### DIAGNOSIS

Females differ from those of *M. nugaruga* in the bilobed spermathecae and the abdomen has few small pallid spots dorsally and ventrally which appears almost entirely brown compared with the almost pallid venter of *M. nugaruga*, from *M. paluma* and *M. rejae* in entirely lacking posterior median spinnerets.

Medium to large, carapace length c.11. 40 cuspules on maxillae, PMS absent. Rastellum absent. Preening combs only on IV. Lateral eye

FIG. 58. *Mandjelia wyandotte* sp. nov., holotype ♀ (QMS18369). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, sternum, maxillae & labium, ventral view; D, spinnerets, ventral view; E, F, abdomen, dorsal (E), ventral view (F); G, spermathecae. Scale line = 3 mm (A, C, E, F), 1.5 mm (B, D), 0.25 mm (G)

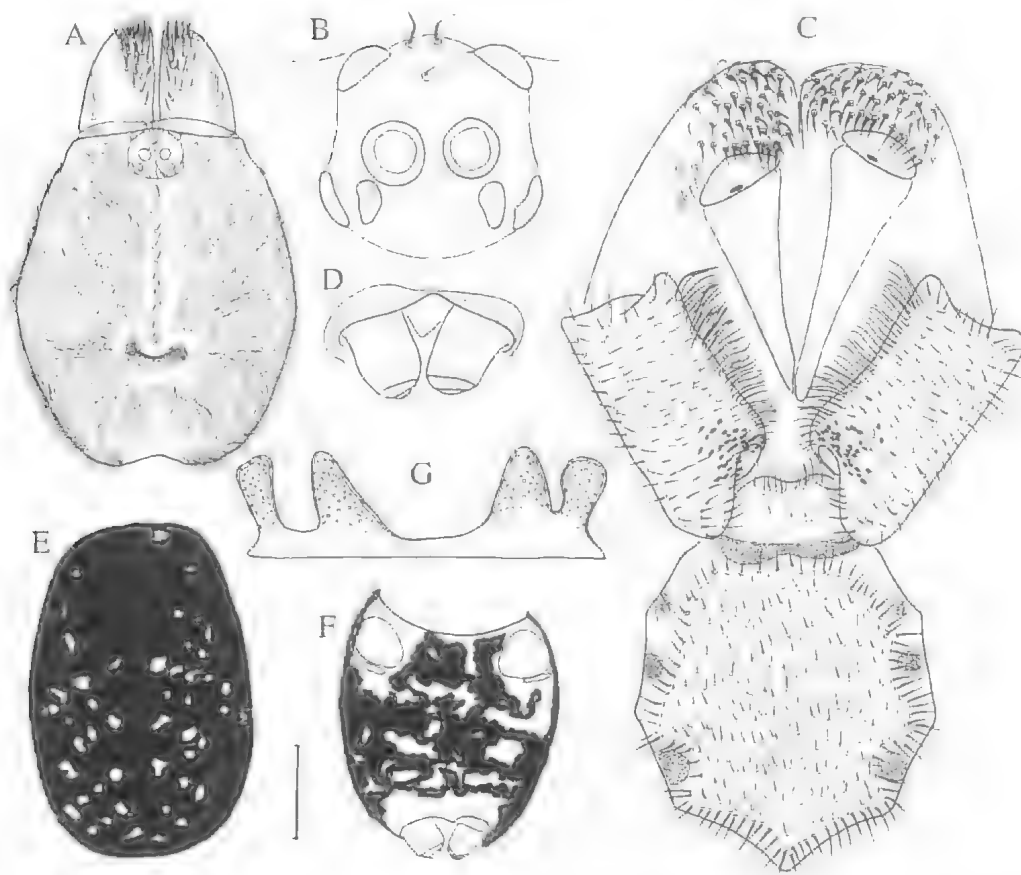


FIG. 59. *Mandjelia yuccabine* sp. nov., holotype ♀ (QMS19040). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, sternum, maxillae, labium & chelicerae, ventral view; D, spinnerets, ventral view; E, F, abdomen, dorsal (E), ventral (F); G, spermathecae. Scale line = 2.4mm (A, E, F); 1.2mm (C, D); 0.6mm (B); 0.3mm (G).

ratio c.1. Scopula in distal 1/2 of metatarsi I, II. Abdomen with 3 pairs of diagonal lines dorsally. FEMALE. Basifemoral thorns and thorn spines absent. Spermathecae two, each a pair of long lobes joining basally or separate; inner lobe coniform, outer thumb-like. Paired claws dentate; palpal claw bare; palpal tarsi aspinose. MALES. Unknown.

#### DESCRIPTION

##### HOLOTYPE FEMALE QMS19040

Carapace 10.90 long, 7.25 wide. Abdomen 10.10 long, 8.88 wide. Total length, 24.

**Colour.** Carapace and chelicerae brown, legs yellow brown. Abdomen dorsally dark brown with small spaced pallid spots forming 3 paired diagonal lines; ventrally brown with smaller pallid areas forming no pattern.

**Carapace.** Pilosity: uniform cover of fine black hairs and bristles; anterior striae distinct, narrow. Bristles: 2-3 erect black beside posterior striae; 5 long black anteromedially and shorter black beside caput; 2 long thick and 4-6 fine between PME, and 6 long thick and 3-5 fine between ALE; fine grey hairs and short black bristles on lateral margins. Fovea short, procurved.

**Eyes.** Tubercle low, distinct. Group occupies 0.27 of head-width; front width, back width, length, 51, 59, 48, respectively. MOQ front width, back width, length, 38, 42, 27, respectively. AME:ALE:PME:PLE, 16:16:12:14. Eye interspaces: AME-AME, 0.3; AME-ALE, 0.7; ALE-PLE, 1.4; PME-PME, 1.6; PME-PLE, 0.1, ALE-ALE, 1.3.

**Chelicerae.** Narrow band of bristles prodorsally, laterally a wide glabrous zone. Rastellum



absent, with few long bristles near fang edge. Furrow promargin with 8 moderately large spaced teeth, basomesally with 8-10 small teeth.

**Labium.** 0.71 long, 1.57 wide; 6 thick setae centrally, glabrous band behind them more fine setae. Labiosternal suture two narrow separated sigilla.

**Maxillae.** 2.43 long in front, 3.29 long behind, 1.48 wide; with c.40 cuspules in inner angle, no mound. Heel broad, rounded; anterior lobe indistinct.

**Sternum.** 4.05 long, 3.71 wide. Sigilla all oval, marginal.

**Legs.** Thorn spines and basifemoral thorns absent. Preening combs: 1 of 3 setae on retroventral IV.

	I	II	III	IV	Palp
Femur	6.00	5.13	4.88	7.00	4.63
Patella	4.00	4.13	3.25	3.63	3.00
Tibia	4.00	3.50	2.88	6.13	2.63
Metatarsus	3.00	3.25	3.75	7.00	-
Tarsus	2.00	2.00	1.63	2.63	2.38
Total	19.00	18.01	16.39	26.39	12.64

**Scopula.** Metatarsi: I, II, thin, entire in distal 1/2; III, in distal 1/4, divided by setal band 3-4 wide; IV, two thin triangles in distal 1/6, divided by setal band 4-6 wide. Tarsi: I, II, full, moderately dense, entire save for setal band 2-3 wide; III, divided by setal band 3-5 wide; IV, divided by setal band 6-8 wide.

**Spines.** I, fe p1, pa 0, ti v2, me v2; II, fe p2, d2w, pa 0, ti p2, v4, me v2; III, fe d3w, r2, pa p3, r1, ti p2, r2, v8, me p4, r3, v10; IV, fe d3w, r1, pa p1, r1, ti r2, v10, me p4, r4, v10; palp, fe p1, d2w, pa 0, ti p1, v6.

**Claws.** Two small teeth in medial row on I, IV; palpal claw large, evident above tufts, slightly smaller than paired claws, bare.

**Trichobothria.** Two rows, each of c.11 for 2/3 of tibiae; c.10 on metatarsi in curving row; c.5 clavate and 12-15 filiform on tarsi.

**Spermathecae.** Two, each a pair of long lobes joining basally or separate; inner lobe coniform, outer thumb-like.

**Spinnerets.** PMS absent. Basal, middle, apical, total articles of PLS, 0.90, 0.19, 0.19, 1.28 long, respectively.

#### DISTRIBUTION & HABITAT

Rainforest at Yuccabine Creek in the Kirrama Range, NW of Townsville, NEQ.

#### *Moruga* gen. nov.

#### DIAGNOSIS

Differs from all other Australian barychelids in ♂♂ having the combination of a weak tibial spur,

a smoothly pyriform palpal bulb and widely trapezoidal eye group. Differs from *Barycheloides* in the narrow sternum, longer labium, and shorter row of teeth medially on the cheliceral furrow.

Rastellum in ♀♀ a distinct mound. Abdomen maculate or black, most evident ventrally. PMS small to well developed. 10-90 cuspules on maxillae. Sternum much longer than wide. **FEMALES.** Palpal claw very small; palpal claw tufts distinct. Spermathecae two, each a sinuous lobe ending in enlarged ovoid lobe. **MALES.** Palpal bulb short, pyriform, with long embolus; retrolateral face of cymbium straight to convex; tibia I with short blunt spur and stout megaspine; claws with 1-2 (rarely) rows of teeth on I, few to no teeth on outer faces on IV.

#### DESCRIPTION

Carapace long ovate; caput arched, low, lightly hirsute; thickened bristles anteromedially on caput and beside them, no enlarged bristles arising from fovea or near posterior striae. Fovea distinctly procurved. Clypeus absent. Eyes in 3 rows; group much wider (c.1.6) behind than in front and wider behind than long; ALE-ALE about half that of ALE-PLE; tubercle present but very low and indistinct in ♀♀, distinct and higher in ♂♂. Maxillary lyra absent. Maxillae with 10-90 cuspules grouped on inner corner, heel produced (♀♀), anterior lobes small, indistinct. Cuspule microstructure: c.50µm in maximum diameter; intercrest distance, 0.5-0.9µm apart; profile, stout, bilaterally uniform balloon; ridge direction, continuous over smooth crest with apical aperture, like thumbprints; cuspule interspace, 2 or more diameters. Rastellum a distinct spinose mound in ♀♀, low in ♂♂; basomesally a group of small teeth and granules reaches c.half length of short furrow. Labium stout, large, (length in ♀ c.0.7 cf. 0.5 most genera) coniform, wider than long, without cuspules. Sternum narrow, 1.2-1.4 times longer than wide; posterior sigilla large, oval c.1 length from margin; other sigilla, large, subcircular marginal. Scopula laterally extensive on ♀♀, extending for lower 270°, normal on ♂♂; full, dense, entire on metatarsi and tarsi I, II of ♀♀, thin on ♂♂; thin and divided by setae, if present, on metatarsi III, IV of ♂♂, more evident but small on ♀♀; more extensive on prolateral metatarsi I, II, than retrolaterally. Preening combs absent in ♂♂, present in subadult ♀♀ of *M. fuliginea*. Dorsal abdomen dark brown, with distinct paired bands or with faintly discernible mottling; legs without

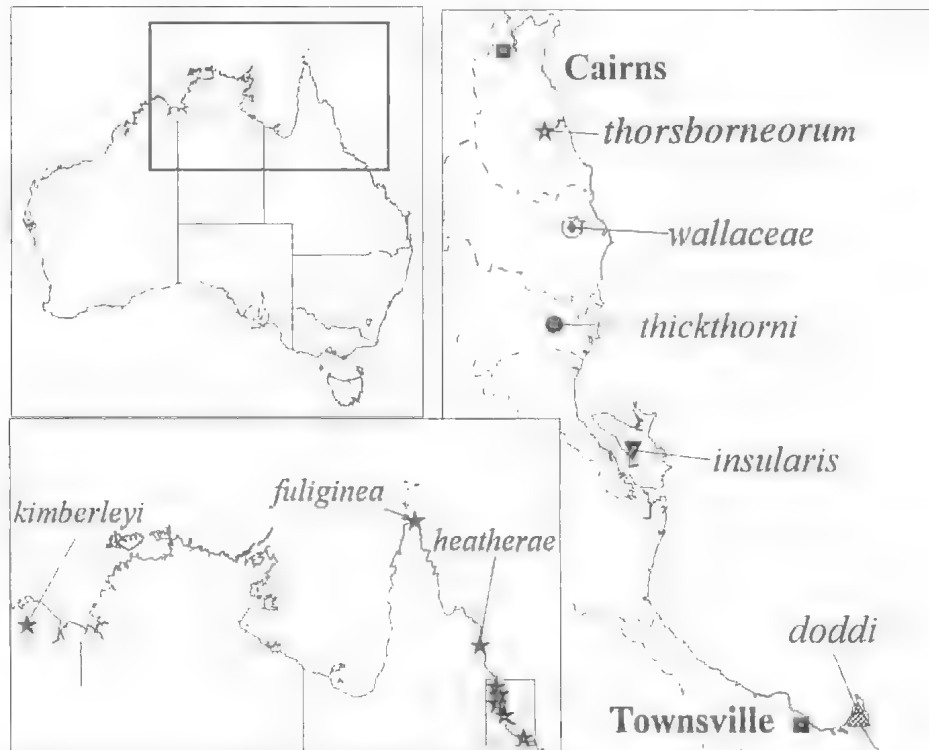


FIG. 60. Records of *Moruga* in northern Australia & northern Queensland (Inset with catchment boundaries).

annulations. Four spinnerets; PMS small to well developed. FEMALES. With few spines on legs I, II; legs I, II noticeably smaller and more slender than III, IV. Females with one row of teeth on paired claws medially or bare; palpal claw very small; palpal claw tufts distinct. Scopula on legs I, II, continuous with tufts. Basifemoral thorns absent. Many strong setae on distal femora and patellae III. Spermathecae of ♀♀ consist of a single sinuous lobe. MALES. Carapace hirsute, dense bush of hairs obscures cuticle on caput and lateral margins; band of erect bristles anteromedially and beside caput, bristles elsewhere thin, not erect. Chelicerae with basomesal granules; intercheliceral tumescence absent. Claws with two rows of 2-5 teeth on leg I or only on outer faces (all other species), one medial row of 1-2 teeth on claws of leg IV, or bare. Tibia I with ventral distal spur; upper megaspine absent. Palp: tibia elongate, bulb simple, pyriform, without keel on embolus. Cymbium dimorphic, retrolaterally straight to convex when viewed from above.

#### TYPE SPECIES

*Moruga thickthorni* sp. nov.

#### ETYMOLOGY

An Australian aboriginal word meaning 'sweet'. It alludes to the love of sugar which resulted in vast areas of lowland forest (near the type locality of *M. thickthorni*) being ploughed under to plant sugar cane. The gender is feminine.

#### DISTRIBUTION & HABITAT

West of Tully, South Johnstone (near Innisfail), Shiptons Flat (south of Cooktown), and Somerset (the tip of Cape York), the foot of Mt Bellenden Ker, and Hinchinbrook Island, all in NEQ, and the Kimberley Region, WA. The ♀ of *M. wallaceae* was found in a 'tunnel nest among railway lines'. Species are found in both rainforest and open forest.

#### SPECIES INCLUDED

*Moruga thickthorni* sp. nov.  
*Moruga doddi* sp. nov.  
*Moruga fuliginea* (Thorell) n. comb.  
*Moruga heatherae* sp. nov.  
*Moruga insularis* sp. nov.  
*Moruga kimberleyi* sp. nov.  
*Moruga thorsborneorum* sp. nov.  
*Moruga wallaceae* sp. nov.

	<i>doddi</i>	<i>fuliginea</i>	<i>heatherae</i>	<i>insularis</i>	<i>kimberleyi</i>	<i>thickhorni</i>	<i>thorsborneorum</i>	<i>wallaceae</i>
Size of PMS	very large	large	large	large	small	large	large	large
No. maxillary cuspules	8-9	11	30-35	14-18	70	13-20	30	12-18
Dorsal abdomen, pattern	black	chevrons	dark	chevrons	pallid	dark	dark	dark
Ventral abdomen, pattern	black	pallid	dark	pallid	pallid	pallid	pallid	dark
Leg formula ♂ (♀)								
♂ Tibial spur position	?	distal	distal	?	?	distal	?	?
Tibial megaspine	?	short straight	short, straight	?	?	short, conical	?	?
Spur size	?	low	low indistinct	?	?	short blunt	?	?
Upper megaspine	?	absent	absent	?	?	absent	?	?
Tibial microspur	?	absent	absent	?	?	absent	?	?
Palpal bulb	?	pyriform	long	?	?	pyriform	?	?
Keels on bulb	?	absent	1 long	?	?	absent	?	?
Embolus origin	?	sudden	gradual	?	?	sudden	?	?
Tooth rows: leg I(IV)	?	1(0)	1(1)	?	?	2(1)	?	?
♀ Spermathecal lobes	1 + 1	?	1 + 1	1 + 1	1 + 1	?	1 + 1	1 + 1
Spermathecae shape	lobe on mound	?	lobe on mound	simple lobe	antennate dome	?	long sinuous	short sinuous
Rastellum	absent	spinose process	low spinose mound	low spinose mound	large, spinose mound	low spinose mound	low spinose mound	low spinose mound
Patellar thorns III(IV)	absent	absent	absent	present	strong	absent	present	absent
Basifemoral thorns	absent	absent	absent	absent	absent	?	absent	absent
Scopula metatarsi III(IV)	absent	1/4(1/6)	1/6(1/8)	1/3(1/5)	1/2(1/4)	1/4(1/6)	1/3(1/5)	>>absent
Preening combs III(IV)	pro & retro	absent	weak	present	absent	absent	present	present
Autapomorphy	eye group shape	abdomen pattern	eye group shape	spermathecae	cuspsules	spur	spermathecae	spermathecae
Habitat	woodland	woodland	woodland	rainforest	'rainforest'	woodland	rainforest	woodland
Distribution	Mt Cleveland, NEQ	Somerset, CYP	Shiptons Flat, NEQ	Hinchinbrook I., NEQ	Kimberley Ra., NJ	'Tully', NEQ	Russell R., NEQ	South Johnstone, NEQ

Table 5. *Moruga* species.

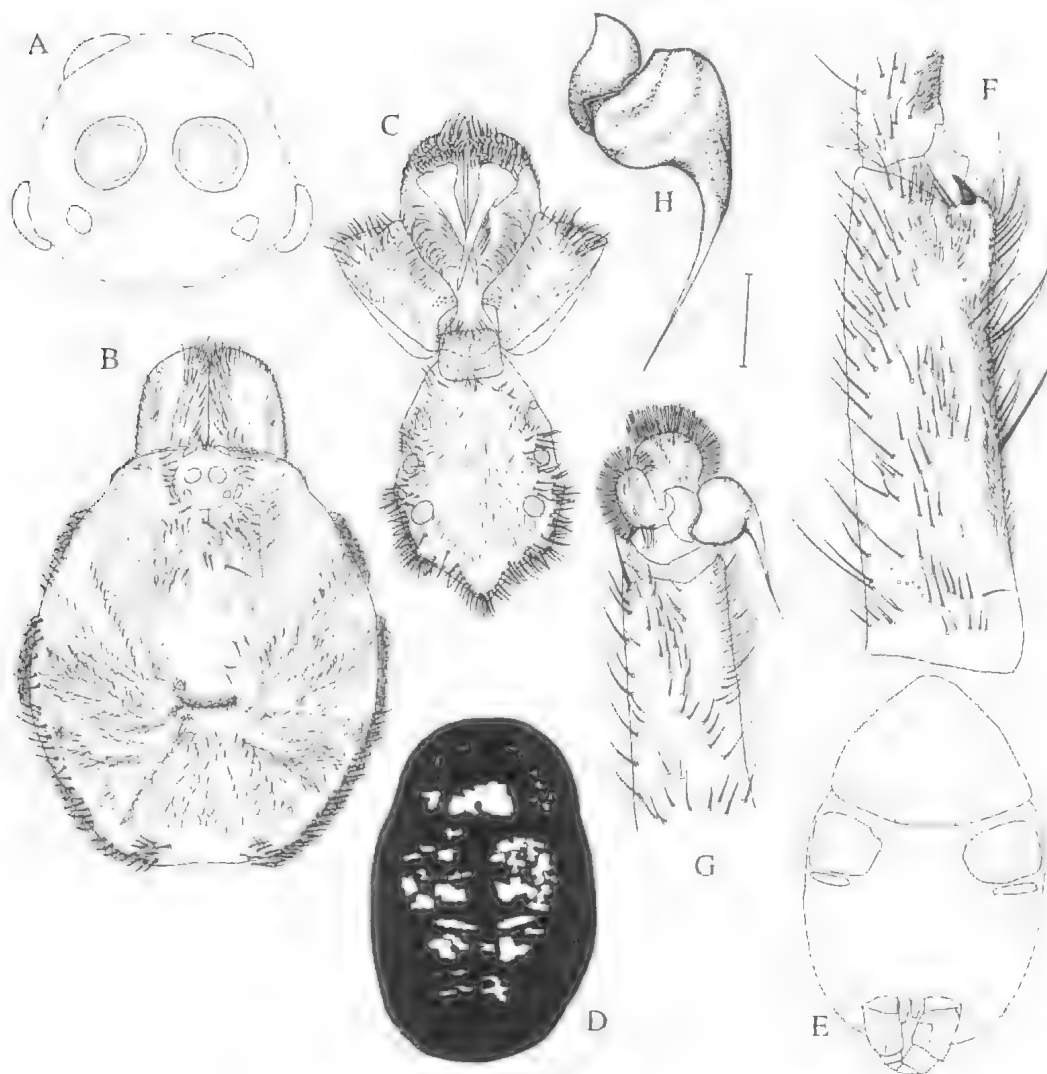


FIG. 61. *Moruga thickthorni* sp. nov., holotype ♂ (QMS11242). A, eye group, dorsal view; B, carapace & chelicerae, dorsal view; C, sternum, maxillae & labium, ventral view; D, E, abdomen, dorsal (D), ventral view (E); F, tibia & metatarsus I, prolateral view; G, cymbium & palpal bulb, ventral view; H, palpal bulb, prolateral view. Scale line = 2mm (B-E); 1mm (F, G); 0.5mm (A, H).

#### REMARKS

The extent of scopula on legs I and II, the reduced abdominal pattern, the deeply procurved fovea, and the size of the ♂ tibial spur of *Moruga* resemble those of *Barycheloides*. The narrow sternum, strongly procurved fovea, and lack of thickened setae near posterior striae ally *Moruga* to the New Caledonian genus *Orstom*. However, the strongly divergent microstructures of the maxillary cuspules reject a close relationship between the two genera.

*Moruga* is one of the most enigmatic barychelid genera in Australia. In many somatic characters, it resembles *Idiommata*. However, unlike any known species of *Idiommata* cuspules on the maxillae number greater than 5, the palpal bulb lacks keels, and the first tibia of the ♂ lacks the microspur present in all known *Idiommata* species. The more numerous cuspules ally the genus to *Encyocrypta*, *Ozicrypta*, and *Mandjelia* but unlike these genera the sternal sigilla are quite large, the fovea is deeply procurved, the sternum

is narrower, and the tibial spur of ♂♂ is distinctly weaker, if present. Spermathecae of ♀ are presumably also highly derived. Presumed autapomorphies of the genus are the low eye tubercle in ♀♀ and very wide back row of eyes (cf. front) and large sternal sigilla. The narrow sternum and strongly procurved fovea are found also in *Orstom* which differs in density and size of cuspules on the maxillae.

#### KEY TO *MORUGA*

##### MALES

1. Two rows of teeth on the claws of leg I . . . *M. thickthorni*  
One row, if any, of teeth on claws of leg I. . . 2
- 2(1). Rastellum strong (Fig. 63A) . . . *M. fuliginea*  
Rastellum absent to weak (Fig. 64E) . . . *M. heatherae*

##### FEMALES

1. Maxillae with about 70 cuspules; anterior face of leg coxae with ridge of strong thornlike setae . . . *M. kimberleyi*  
Maxillae with up to 40 cuspules; anterior face of leg coxae weakly setose . . . 2
- 2(1). Rastellum absent to weak (Fig. 65A) . . . 3  
Rastellum distinct to strong (Figs 63A, 70C) . . . 4
- 3(2). Eye group widely trapezoidal . . . *M. heatherae*  
Eye group subquadrate . . . *M. doddi*
- 4(2). Scopula present on metatarsi III, IV . . . 5  
Scopula absent on metatarsi III, IV . . . *M. wallaceae* (part)
- 5(4). Scopula confined to no more than distal 1/6-1/8 of metatarsi III, IV . . . 6  
Scopula up for distal 1/3 of metatarsi III . . . 7
- 6(5). Rastellum on a separate mound with short strong conical spines (Fig. 63A) . . . *M. fuliginea*  
Rastellum not on a separate mound with longer spines (Fig. 69C) . . . *M. wallaceae* (part)
- 7(5). Sternum with distinct wide border extending back between coxae IV (Fig. 66F) *M. insularis*  
Sternum border narrow, normal (Fig. 68B) . . . *M. thorsborneorum*

***Moruga thickthorni* sp. nov.**  
(Figs 60, 61, Table 5)

##### MATERIAL EXAMINED

TYPE. Holotype ♂, Tully area, [17°56'S 145°56'E], NEQ, May 1980, I. Wilkinson, QMS11242.

##### DIAGNOSIS

Differs from *M. thorsborneorum* by fewer cuspules (10-20 vs 35), the dark venter, and short

scopula extent on metatarsi III, and the lack of preening combs and from *M. heatherae* in having two rows of teeth on leg I claws of ♂♂. Males differ from ♀♀ of *M. wallaceae* in the less pronounced rastellum, the very small PME, and the dark venter.

Rastellum a distinct weakly setose mound, PMS well developed, 13-20 cuspules in narrow band on maxillae. Preening combs absent. MALES. Palpal bulb short, pyriform, with long embolus. Retrolateral face of cymbium straight to convex. Tibia I with short blunt spur and stout megaspine. Claws with 2-5 teeth in 2 rows (I) and 1-2 very small teeth only on outer faces (IV). FEMALES. Unknown.

##### ETYMOLOGY

For Charles Walter de Vis (1829-1915), first Director of the Queensland Museum. Before joining the Museum, de Vis published many popular articles under the pen-name of 'Thickthorn' (Ingram, 1990). De Vis described 551 new fossil and extant taxa including one spider, *Nephila maculata piscatorum* de Vis, 1911.

##### DESCRIPTION

###### HOLOTYPE MALE QMS11242

Carapace 9.36 long, 7.76 wide. Abdomen 7.68 long, 5.04 wide. Total length, 19.

**Colour.** Carapace, chelicerae, and legs red-brown. Abdomen dorsally brown with pale mottled patches largest medially; ventrally entirely brown.

**Carapace.** Uniform cover of short fine bristles. Bristles: long thicker anteromedially and behind eyes; several between ALE and PME; posterior margins with long black, not strong, in several rows; all interspersed with fine silvery hairs; posterior and lateral margins with dense bush of silver hair. Fovea procurved.

**Eyes.** Tubercle distinct, raised. Eye group occupies 0.26 of head-width; front width, back width, length, 53, 83, 60. 3 rows; back row straight; PME very small. MOQ front width, back width, length, 48, 53, 33. AME:ALE:PME:PLE, 22:21:8:20. Eye interspaces: AME-AME, 0.3; AME-ALE, 0.7; ALE-ALE, 0.8; PME-PLE, 0.4; PME-PME, 1.7; ALE-PLE, 1.4.

**Chelicerae.** Long black bristles along dorsal face interspersed with fine brown hairs. Rastellum a low distinct mound with 30-40 short spinules just above fang joint and in inner corners. Furrow promargin with 1 small distal and 7 large teeth, 10 small teeth evident

basomesally, Intercheliceral tumescence and lyra absent.

**Labium.** 1.36 wide, 0.64 long. Labiosternal suture a wide deep and continuous groove, separate sigilla not evident.

**Maxillae.** 2.48 long in front, 3.36 long behind, 1.52 wide; with c. 13-20 cuspules in narrow band on inner corner. Heel slightly produced; anterior lobe distinct.

**Sternum.** Narrow; 5.44 long, 3.84 wide. Sigilla all moderately large, oval, submarginal; posterior 0.48 long and 0.40 from edge, middle 0.40 long, 0.16 away, anterior 0.16 long and touching edge.

**Legs.** Tibia I with very short blunt spur and stout horn-like megaspine directed laterally, almost perpendicular to long axis of tibia; pallid area of cuticle but no megaspine or process dorsal of spur. Many strong setae on distal femora and proximal patellae III but not true thorns. Preening combs absent. Ventral and lateral faces of tarsi pallid; tarsi IV almost pseudosegmented.

	I	II	III	IV	Palp
Femur	8.21	7.61	6.17	8.50	5.61
Patella	4.40	4.39	3.63	4.33	3.54
Tibia	5.75	4.71	4.25	6.67	4.67
Metatarsus	5.54	4.61	5.07	8.23	-
Tarsus	2.63	2.44	2.29	2.79	1.90
Total	26.53	23.76	21.41	30.52	15.72

**Scopula.** Metatarsi: I, II, distal 3/4, thin, mixed with 3-4 setae; III, IV, distal 1/4 (III) or 1/6 (IV), very thin, two narrow triangles parted by bristles. Tarsi: I, II, thin, parted by few scattered setae not forming continuous band; III, IV, dense, full, parted by narrow setal band 6-8 wide.

**Spines.** I, fe p1, d4, pa 0, ti v4 + megaspine, mc 0; II, fe p1, d3, pa 0, ti p2, v7, mc v1, III, fe p2, d3, r3, pa p4, ti p2, r3, v7, mc p5, d2, r4, v8; IV, fe d2, r2, pa r1, ti r2, v8, mc p4, r5, v12. Palp: fe p1, pa 0, ti p1, v3.

**Claws.** 3-5 teeth in distal outer, 2 in proximal inner rows, all set high (I), to 1-2 very small teeth (IV).

**Trichobothria.** Two rows, each of 9-12 on tibiae; c. 15 on metatarsi in slightly curving line; c. 25 filiform on tarsi.

**Palp.** Tibia elongate. Bulb very small, short, pyriform with gradual embolic origin; embolus long smooth, acute. Retrolateral face of cymbium straight to convex.

**Spinnerets.** PMS well developed, 0.64 long, 0.20 wide, 0.08 apart, c. 0.23 of basal PLS in diameter. PLS length of basal, middle, apical, and total articles 1.20, 0.56, 0.20, 1.96, respectively,

#### DISTRIBUTION & HABITAT

Dry, open forest, west of Tully, an adjacent catchment basin to that of *M. wallaceae* from South Johnstone, just south of Innisfail, NEQ.

#### *Moruga doddi* sp. nov.

(Figs 60, 62, Table 5)

#### MATERIAL EXAMINED

**TYPE.** Holotype ♀, Mt Cleveland, NEQ, altitude 460-560m. AG, 20 Jan 1991, QMS18222.

#### DIAGNOSIS

Differs from *Ozicrypta* on Mt Cleveland and NEQ in the well developed posterior median spinnerets and from other *Moruga* species in the small size and wide sternum.

PMS well developed. Maxillae with 8-9 cuspules. Rastellum absent. **FEMALES.** Basifemoral thorns absent; preening combs present. Patellae I-III clearly longer than tibiae; legs I, II with few to no spines. Scopula absent on metatarsi IV; present on all other metatarsi and tarsi. Paired claws edentate. Spermathecae two, each a broad low mound with narrow apical lobe and enlarged apex with distal concavity. **MALES.** Unknown.

#### DESCRIPTION

##### HOLOTYPE FEMALE QMS18222

Carapace 4.20 long, 3.60 wide. Abdomen 4.80 long, 3.60 wide. Total length, 10.

**Colour.** Carapace dark orange brown with light brown mark on caput and darker markings along carapace edge and on interstrial ridges, chelicerae yellow brown, legs yellow brown with three longitudinal brown bands laterally and dorsally on tibiae of legs and also weakly on metatarsi IV. Abdomen dorsally black without pattern; ventrally without pattern but with uniform light brown flecks; sternum, maxillae, and labium orange brown.

**Carapace.** Pilosity: light pile of long, fine, brown hairs; striae indistinct, shallow. Bristles: none beside posterior striae; 9 long anteromedially and many long brown beside caput ridge; 2 long fine and 10-15 finer between PME, and 3 long thick and 14-20 finer between ALE; 2-4 pairs of foveal bristles; short hairs only on lateral margins near posterior corner. Fovea moderately wide, slightly procurved.

**Eyes.** Tubercle distinct. Group short, almost subquadrate, occupies 0.36 of head-width; front width, back width, length, 34, 40, 28, respectively. Back row procurved. MOQ front width, back



width, length, 24, 28, 17, respectively. AME:ALE:PME: PLE, 10:10:5:10. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.8; ALE-PLE, 1.2; PME-PME, 1.8; PME-PLE, 0; ALE-ALE, 1.6.

#### Chelicerae.

Small, rounded, with narrow band of long fine bristles prodorsally, laterally only sparsely setose. Rastellum absent, but group of 3-4 thicker setae overhangs fang. Furrow promargin with 7 small spaced teeth, basomesally with 6-7 fine teeth.

**Labium.** 0.38 long, 0.70 wide. Labiosternal suture a continuous narrow groove.

**Maxillae.** 1.00 long in front, 1.30 long behind, 0.75 wide; with 8-9 pointed cuspules in inner angle. Heel distinctly produced with short curved or hooked setae on heel and along posterior edge; anterior lobe indistinct.

**Sternum.** 2.13 long, 1.80 wide. Sigilla all small, oval, marginal.

	I	II	III	IV	Palp
Femur	2.32	2.20	1.92	2.68	1.88
Patella	1.68	1.60	1.44	1.72	1.28
Tibia	1.52	1.52	1.36	2.20	1.00
Metatarsus	1.08	1.12	1.20	2.04	.
Tarsus	0.80	0.84	0.76	0.96	0.96
Total	7.40	7.28	6.68	9.60	5.12

**Legs.** Stout, patellae I-III clearly longer than tibiae. I almost aspinose, II entirely aspinose. Basifemoral thorns and thorn spines absent. Preening combs: 1 of 2-4 setae pro- and retrolateral on III, IV.

**Scopula.** Metatarsi: I, II, full, moderately dense but with short hair, entire; III, in distal 2/3 on prolateral face, parted by wide setal band from sparse hairs reaching only from distal quarter on retrolateral face; IV, absent. Tarsi: I, II, full, moderately dense but with short hair, entire; III, widely divided by setal band 2-3 wide; IV, divided by setal band 8-10 wide.

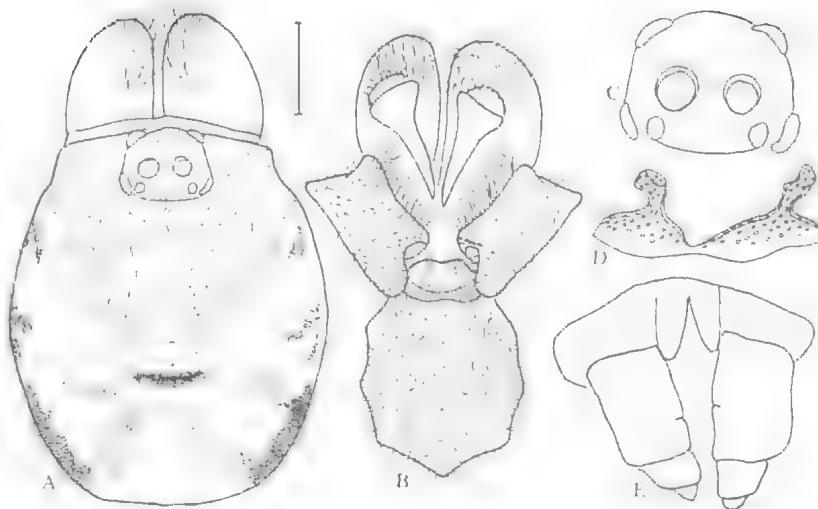


FIG. 62. *Moruga doddi* sp. nov., holotype ♀ (QMS18222). A, carapace & chelicerae, dorsal view; B, sternum, maxillae, labium & chelicerae, ventral view; C, eyes, dorsal view; D, spermathecae; E, spinnerets, ventral view. Scale line = 1mm (A, B); 0.5mm (C, E); 0.25mm (D).

**Spines.** I, fe p1w, rest, 0; II, 0; III, fe p1, pa 0, ti p1, rl, v2w, me p1, rl, v0; IV, fe 0, pa 0, ti v2w, me p1, v2. Palp: fe p1, pa 0, ti p1, v5.

**Claws.** All leg claws bare and protrude just above small claw tufts; palpal claw small, bare.

**Trichobothria.** Two rows, each of 8 for two-thirds of tibiae; c.6 on metatarsi in strongly curved row; about 10-15 filiform and 1-2 fine clavate on tarsi.

**Spermathecae.** Two, each a broad low mound with narrow apical lobe and enlarged apex with distal concavity.

**Spinnerets.** PMS well developed, 0.32 long, 0.14 wide, 0.03 apart, and c.0.33 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 0.70, 0.13, 0.08, 0.91 long, respectively.

#### DISTRIBUTION & HABITAT

Mt Cleveland, just south of Townsville, NEQ. The collector of the holotype reports that the habitat is *Xanthorrea-Casuarina* with patches of blady grass. Many exposed granite boulders stud the steep slopes which are covered by thin, generally rocky, soils. A very small (150 metres in diameter) patch of rainforest occurs on the eastern (seaward) slope.

***Moruga fuliginea* (Thorell) n. comb.**  
(Figs 9A, 20E, 60, 63, Table 5)

*Idiommata fuliginea* Thorell, 1881, p. 243; Roewer, 1942, p. 215; Bonnet, 1957, p. 2287; Main, 1985, p. 14 (listed as genus *incertae sedis*).

*Encyocrypta fuliginata*: Hogg, 1901, p. 241; Rainbow, 1911, p. 115.

**MATERIAL EXAMINED**

TYPE. Holotype ♂, Somerset, Cape York, NEQ, 10°45'S 142°35'E, 1875, L.M. D'Albertis, in CMG.

OTHER MATERIAL EXAMINED: Juv., Horn Is., Torres Strait, NEQ, 8 Dec 1986, JAG, QMS19128.

**DIAGNOSIS**

Males differ from those of *M. heatherae* in having a rastellum and from *M. wallaceae* in the single row of teeth on claws on I. Females differ from those of *M. thickthorni* in the more pronounced rastellum and the distinct banded abdominal pattern.

PMS present, distinct. c.11 cuspsules on maxillae. Abdomen dorsally brown with 4-5 well-

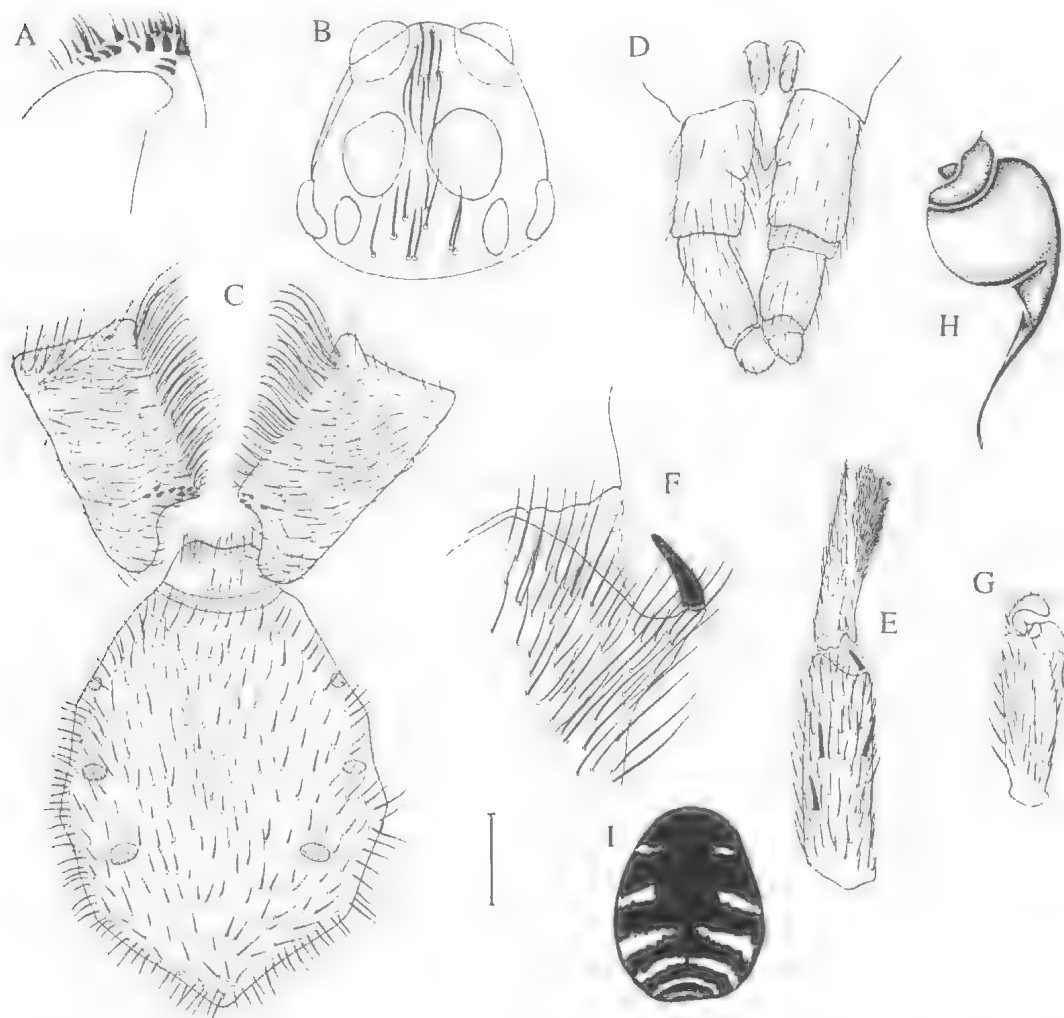


FIG. 63. *Moruga fuliginea* (Thorell), holotype ♂, CMG & juvenile ♀ QMS19128. A, rastellum; B, eye group, dorsal view; C, sternum, maxillae & labium, ventral view; D, spinnerets, ventral view; E, tibia & metatarsus I, prolateral view; F, tibial spur, prolateral view; G, cymbium & palpal bulb, prolateral view; H, palpal bulb, ventral view; I, abdomen, dorsal view. Scale line = 0.5mm (A, B, F, H); 1mm (C, D); 2mm (E, G); 4mm (I).

defined paired oval areas; ventrally pallid. Rastellum strong, with 8-10 short coniform spines on separate distal mound and 8-10 blunt spines in adjacent zone. MALES. Pyriform bulb without keels; tibia I with short coniform spur distally, no microspur. Teeth only on outer faces of claws (I); claws of IV bare. FEMALES (see Remarks). Basifemoral thorns absent. Preening combs present on retroventral III, IV. Scopula in distal 1/4 of metatarsi III, very narrow triangles in distal 1/6 of IV. Palpal claw c. 1/2-1/3 height of tufts. Sternum c. 1.3 times longer than wide. Adult ♀♀ unknown.

#### DESCRIPTION

##### HOLOTYPE MALE (CMG)

Carapace 7.77 long, 6.15 wide. Abdomen damaged.

*Colour.* Carapace, chelicerae, and legs red brown.

*Carapace.* Silver hairs and brown bristles (mostly rubbed off). Bristles: several between PME; long and many in groups on margins; several between AME. Fovea slightly procurved.

*Eyes.* Group occupies 0.34 of head-width; front width, back width, length 44, 68, 62. Back row procurved. MOQ front width, back width, length, 42, 47, 39. Ratio of AME:ALE:PME:PLE, 23:18:12:16. Eye interspaces: AME-AME, 0.3; AME-ALE, 0.6; ALE-PLE, 1.3; ALE-ALE, 0.8; PME-PLE, 0.2; PME-PME, 1.4.

*Chelicerae.* Dorsally with long brown bristles. Rastellum consists of 8-10 short thick spines entirely on low mound. Promargin of furrow with 8 teeth, basomesally with 2 rows, each of 10-15 small teeth.

*Labium.* 1.19 wide, 0.62 long.

*Maxillae.* 2.00 long in front, 2.58 long behind, 1.15 wide. With 11 cuspules on inner angle. Lyra absent.

*Sternum.* 4.16 long, 3.44 wide. Separated from labium by continuous narrow groove. Sigilla shape, length and distance from margin of posterior, oval, 0.31, 0.31; middle, oval, 0.27, 0.12; anterior, round, 0.15, touching.

*Legs.* Tibia I with low distal ventral spur and megaspine. Preening combs absent but two setae on common base of retrodistal face of IV.

	I	II	III	IV	Palp
Femur	6.83	6.17	5.75	7.83	4.75
Patella	3.67	3.75	3.08	4.08	2.83
Tibia	4.75	4.25	3.42	6.25	3.58
Metatarsus	4.25	3.83	4.50	7.00	-
Tarsus	2.33	2.25	2.25	2.83	1.58
Total	21.83	20.25	19.00	27.99	12.74

*Scopula.* Entire on tarsi I, II; distal 1/2-2/3 of metatarsi I, II; divided by narrow (III) or broad (IV) setal band on tarsi III, IV; thin, distal on metatarsi III; in two distal lateral clusters on metatarsi IV.

*Spines.* I: fe p1, d6, pa 0, ti p2, v5 + megaspine, me v1. II: fe p2, d3, pa 0, ti p2, v7, me p1, v1. III: fe d3, r3, pa p3 (short), ti p1, r2, v8, me p3, r5, v4. IV: fe d3, r1, pa 0, ti r2, v8, me p4, r4, v8. Palp: fe 0, pa 0, ti r1.

*Claws.* 3 on outer faces of both claws (I), and bare (IV).

*Trichobothria.* c.8 in each of two rows on tibiae; c.10 on metatarsi; a broad band of about 20 filiform on tarsi.

*Spinnerets.* PMS 0.50 long, 0.19 wide, 0.19 apart and c.0.27 of mid-width of PLS. Basal, middle, apical, and total articles of PLS 1.38, 1.23, 0.38, 2.99, respectively.

*Palp.* Bulb pyriform with elongate tapering embolus lacking keels.

#### DISTRIBUTION & HABITAT

The type-locality, Somerset, and adjacent Horn Island at the tip of Cape York, far NEQ. Habitats in the area are open forest, rainforest, and flooded palm rainforests.

#### REMARKS

Characters of ♀♀ are deduced from those of a large juvenile ♀ (total length, 18mm).

#### *Moruga heatherae* sp. nov. (Figs 60, 64, 65, Table 5)

#### MATERIAL EXAMINED

*TYPES.* Holotype ♂, 'Little Forks', Shiptons Flat, 15°48'55"S, 145°13'55"E, open forest, at night, 6 Jan 1992, KRM and ANZSES Expedition, QMS19428; allotype ♀, The Little Forks, (as above) 15°49'S 145°13'E, 380m, 17 Dec 1990-17 Jan 1991, QMS19550. All in NEQ.

#### DIAGNOSIS

Differs from *M. fuliginea* in lacking a rastellum, from *M. thickthorn* in the much weaker tibial spur in ♂♂ and from *M. doddi* in the larger size and clearly trapezoidal eye group.

Rastellum absent. PMS well developed. 30-35 cuspules in narrow band on maxillae. Preening combs absent. MALES. Palpal bulb long pyriform with low twisting keel for distal half to narrow gradually tapering embolus; retrolateral face of cymbium distally concave. Tibia I with very low distal spur on proventral corner with long, almost straight megaspine; microspur and

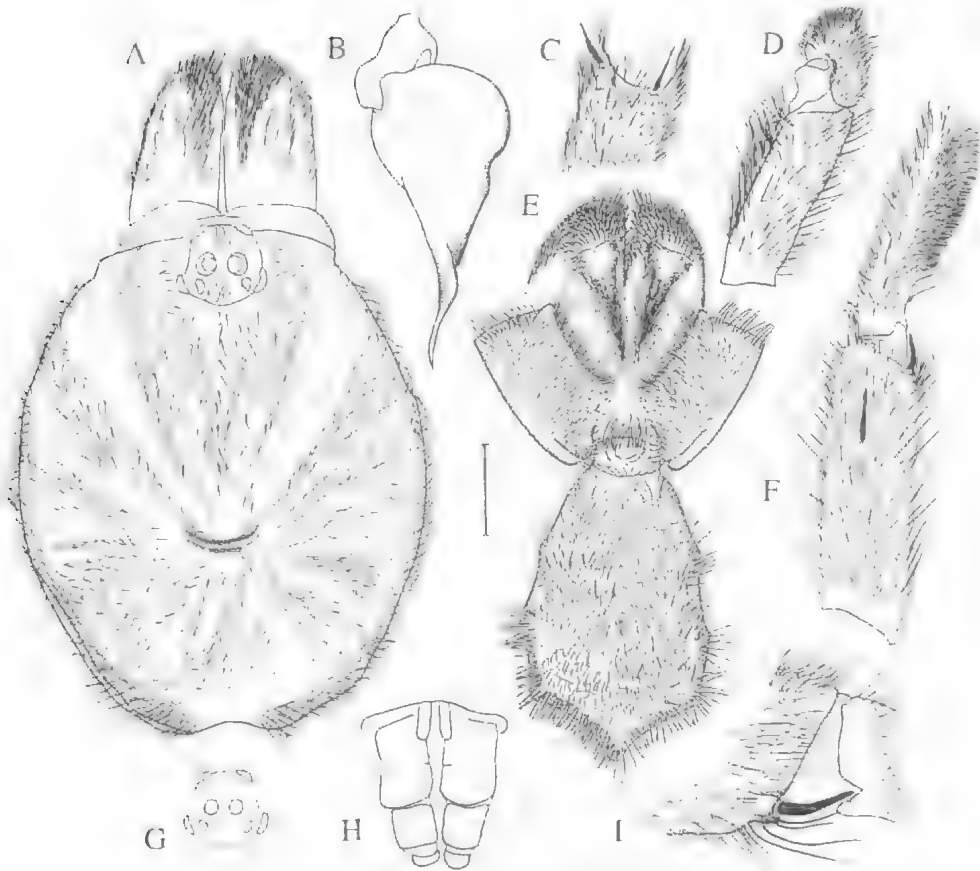


FIG. 64. *Moruga heatherae* sp. nov., holotype ♂ (QMS19428). A, carapace & chelicerae, dorsal view; B, palpal bulb, ventral view; C, F, tibia & metatarsus I, ventral (C); lateral with metatarsus (F); D, palpal bulb, tarsus & tibia, proventral view; E, chelicerae, sternum, maxillae & labium, ventral view; G, eyes, dorsal view; H, spinnerets, ventral view. Scale line = 2mm (A, E, G); 0.5mm (B, I); 1mm (C, D, F, H).

upper megaspine absent. Claws: 1-2 teeth medially (I) and bare (IV); all of similar size and extend above dense tufts. FEMALES. Spermathecae two, each a broad low mound with long stalked lobe.

#### ETYMOLOGY

For Ms Heather Janetski, Education Officer, Queensland Museum, in recognition of her many contributions to natural history and collections from northern Queensland.

#### DESCRIPTION

##### HOLOTYPE MALE QMS19428

Carapace 11.10 long, 8.63 wide. Abdomen 9.38 long, 6.25 wide. Total length, 23.

*Colour.* Carapace deep reddish brown with darker areas on caput, chelicerae dark orange brown, and legs dark reddish brown, not annulated. Abdomen dorsally and ventrally black without pattern.

*Carapace. Pilosity:* light cover of fine wavy black hairs forming dense bushes on lateral caput and along margins, intermixed a layer of thick short black bristles uniformly and irregularly across caput but in radial lines elsewhere; striae shallow, wide, indistinct, glabrous. Bristles: 6-8 thicker erect black beside posterior striae; c.10 thick and several finer anteromedially and few short thick in band beside caput; 9 long thick and several finer between PME, and 2 posteriorly and

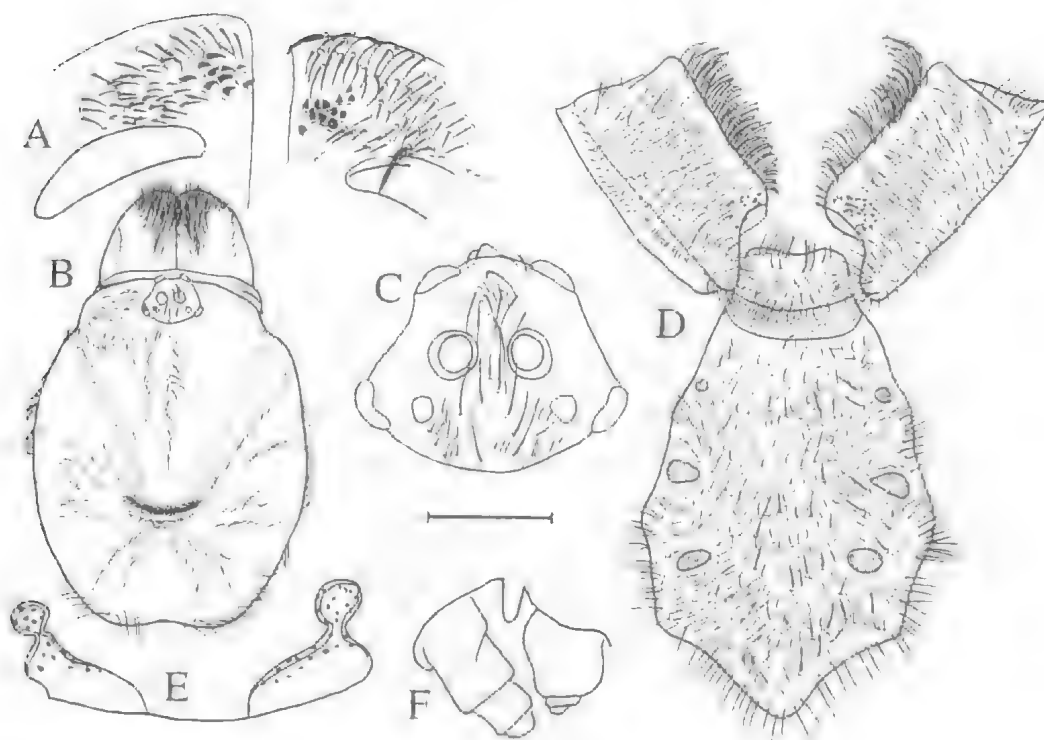


FIG. 65. *Moruga heatherae* sp. nov., allotype ♀ (QMS19550). A, apical chelicerae with rastellum, ventral view; B, carapace & chelicerae, dorsal view; C, eyes, dorsal view; D, sternum, maxillae & labium, ventral view; E, spermathecae; F, spinnerets, ventral view. Scale line = 1mm (A, C, F); 4mm (B); 2mm (D); 0.5mm (E).

5 anteriorly long thick and several finer between ALE; fine black bristles and light bush of black wavy hairs and bristles on lateral margins. Fovea deep, slightly procurved.

**Eyes.** Tubercle distinct. Group occupies 0.27 of head-width; front width, back width, length, 85, 126, 96, respectively. Back row slightly procurved. MOQ front width, back width, length, 70, 78, 53, respectively. AME:ALE:PME:PLE, 33:30:20:34. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.8; ALE-PLE, 1.4; PME-PME, 1.5; PME-PLE, 0.2, ALE-ALE, 0.9.

**Chelicerae.** Many short black bristles in wide band prodorsally, laterally a narrow band of short setae. Rastellum absent, a low mound above fang. Intercheliceral tumescence absent. Furrow promargin with 3 large and 6 smaller spaced teeth, basomesally without teeth or granules.

**Labium.** 0.94 long, 1.63 wide. Labiosternal suture a broad continuous groove. Ventral surface generally hirsute, no pattern of setae evident.

**Maxillae.** 2.50 long in front, 3.44 long behind, 1.56 wide; with 30-35 blunt cuspules on slightly

raised mound on inner angle. Heel slightly produced, angular; anterior lobe small, indistinct.

**Sternum.** Narrow, 6.06 long, 4.25 wide. Sigilla: posterior pair elongated to c.14% of sternum width, slightly separated from margin, middle pair as long, aligned parallel to margin and close; anterior pair small, oval, marginal. General cover of short black bristles and fine wavy hair; posterior margins with long thick black bristles.

**Legs.** Tibia I with very low distal spur on proventral corner with long, almost straight megaspine; microspur and upper megaspine absent. All scopulate surfaces of tarsi and distal metatarsi I, II pallid, incassate. Lateral femora with dense pile of fine black hair. Thorn spines and preening combs absent.

	I	II	III	IV	Palp
Femur	7.81	7.38	7.00	9.00	4.81
Patella	4.88	4.63	4.00	4.69	3.25
Tibia	5.63	5.00	4.38	7.13	3.63
Metatarsus	4.69	4.44	5.44	9.06	
Tarsus	2.81	2.63	2.50	3.19	1.75
Total	25.82	24.08	23.32	33.07	13.44

**Scopula.** Metatarsi: I, II, full length of prolateral face in diagonally line ventrally to half

length retrolaterally, dense, entire; III, two triangular clusters in distal 1/6; IV, like III but clusters narrower, in distal 1/8. Tarsi: I, II, full, dense, entire with few black setae medially but not dividing scopula; III, dense, full, divided by narrow setal band 10-12 wide; IV, similar to III but scopula less dense.

*Spines*. I: fe p1, d4, pa 0, ti p2, v5 + megaspine, me p1, v0. II: fe p1, d4, pa 0, ti p2, v6, me p2, retroventral 1. III: fe p2, d4, r2, pa p3, ti p2, r2, v5, me p3, r5, v7; IV: fe d4, r1, pa 0, ti r2, v7, me p4, r4, v8. Palp: fe p1, d3, pa p2, ti p1, v1.

*Claws*. 1 small and 2 minute teeth medially on I; bare on IV; all of similar size and extend above dense tufts.

*Trichobothria*. Two rows, each of c.11 for 1/2 length of tibiae; c.15-20 on metatarsi, row is retrolateral at most basal point (medially) and becomes cluster distally on dorsal surface; no clavate and c.15-20 filiform on tarsi in two bands.

*Palp*. Bulb, long pyriform with low twisting keel for distal half to narrow gradually tapering embolus; cymbium subequally bilobed; retrolateral face of cymbium distally concave. Distal 1/4 of tibia with small ventral area, glabrous, not grooved.

*Spinnerets*. PMS 0.78 long, 0.25 wide, 0.13 apart, and c.0.21 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 1.88, 1.88, 0.34, 4.10 long, respectively. Small spigots present on all articles of all spinnerets.

#### ALLOTYPE FEMALE QMS19550

Carapace 11.70 long, 8.67 wide. Abdomen 10.70 long, 9.33 wide. Total length, 25.

*Colour*. Carapace and chelicerae dark orange brown, legs dark brown, not annulated. Abdomen dorsally dark brown without pattern; laterally ruptured obscuring venter, evidently entirely brown.

*Carapace*. Pilosity: light uniform cover of short straight brown hairs and thicker bristles; thickest bristles along caput ridge, elsewhere slightly thicker than hairs; striae distinct, narrow, deep pair of oval depressions just in front of fovea. Bristles: none thick beside posterior striae; band of 2-3 rows of 15-20 anteromedially and wide band of many in band beside caput; 8 long thick and many finer between PME, and c.6 long thick and many finer between ALE; fine long hairs on lateral margins. Fovea broad, deep, distinctly procurved.

*Eyes*. Tubercle distinct. Group widely trapezoidal, occupies 0.27 of head-width; front width, back width, length, 75, 132, 82, respective-

ly. Back row straight. MOQ front width, back width, length, 61, 80, 42, respectively. AME:ALE:PME:PLE, 21:25:15:22. Eye interspaces: AME-AME, 0.8; AME-ALE, 1.1; ALE-PLE, 2.4; PME-PME, 2.7; PME-PLE, 0.3. ALE-ALE, 1.5.

*Chelicerae*. With wide band of many short brown bristles prodorsally, laterally narrow band of short setae. Rastellum a low but distinct mound covered with many short strong curved bristles. Furrow promargin with 8 thick closely grouped teeth; basomesally with 10 teeth distally becoming band of 30-50 granules basally, 'basomesal' group extends to distal 3/4 of furrow.

*Labium*. 0.93 long, 1.87 wide; broad, uniformly covered with long fine setae; no pattern of setae or thicker setae posteriorly on labium. Labiosternal suture a broad wide groove.

*Maxillae*. 2.73 long in front, 3.87 long behind, 2.00 wide; with c.28-30 blunt cuspules in inner angle. Heel distinctly narrowed and pointed posteroventrally; anterior lobe indistinct.

	I	II	III	IV	Palp
Femur	5.33	6.13	5.73	7.73	5.07
Patella	3.60	4.27	4.00	4.93	4.67
Tibia	3.47	3.87	3.73	4.67	2.93
Metatarsus	2.67	3.47	3.73	5.73	—
Tarsus	2.00	2.00	1.73	2.13	2.13
Total	17.07	19.74	18.92	25.19	14.80

*Sternum*. 7.47 long, 4.67 wide; narrow. Sigilla: posterior pair oval, distinctly raised, 14% of sternal width long, 17% from margin; middle pair oval, slightly raised, 16% of sternal width long, 3% from margin; anterior pair distinct, oval, small, marginal.

*Legs*. Very stout; I clearly thinner than II-IV. Basifemoral thorns and thorn spines absent. Preening combs: 1 of 2-3 weak setae on retroventral III, IV.

*Scopula*. Metatarsi: I, II, full, dense, diagonal; III, IV, distinct pair of thin groups in distal 1/6-1/8. Tarsi: I, II, full, dense, entire; III, divided by narrow setal band 10-15 wide; IV, divided by setal band 15-20 wide.

*Spines*. I: fe p1w, pa 0, ti 0, me 0. II: fe p1w, pa 0, ti 0, me 0. III: fe r1, pa 0, ti p1, r2, v6, me p2, r2, v6. IV: fe r1w, pa 0, ti r3, v6, me p3, r2, v7. Palp, fe p1w, pa 0, ti p2 v9w.

*Claws*. 4 small (I) to no (IV) teeth in 1 row; palpal claw clearly smaller than tufts, bare.

*Trichobothria*. Two rows, each of c.9 for half length of tibiae; c.20 on metatarsi in curving row and forming distal cluster; c.6 long slender clavate and c.15 filiform in tow bands on tarsi.

*Spinnerets*. PMS 0.67 long, 0.32 wide, 0.19 apart, and c.0.25 of basal PLS in diameter. Basal,



middle, apical, total segments of PLS, 1.62, 0.76, 0.32, 2.70 long, respectively.

**Spermathecae.** Two, each a broad low mound with long stalked lobe.

#### DISTRIBUTION & HABITAT

Open eucalypt forest at Shiptons Flat, just south of Cooktown, NEQ.

#### *Moruga insularis* sp. nov. (Figs 60, 66, Table 5)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Gayundah Ck, Hinchinbrook Is National Park, NEQ, 18°22'S 146°13'E, 12 Nov 1984, JAG, VD, QMS19664.

#### DIAGNOSIS

Females differ from those of *M. wallaceae* in the wider sternum, less convoluted form of the spermathecae, and the more extensive scopula on metatarsi III, IV.

Rastellum a low but distinct mound with c. 10-15 short coniform spines. Maxillae with 14-18 cuspules. Preening combs on III, IV. Spermathecae two, each a slender sinuous mound directed obliquely outward.

#### DESCRIPTION

##### HOLOTYPE FEMALE QMS19664

Carapace 6.19 long, 5.25 wide. Abdomen 7.88 long, 5.75 wide. Total length, 16.

**Colour.** Carapace, chelicerae, and legs orange brown, not handed. Abdomen dorsally brown with moderately large white spots, in posterior half

forming 4 paired diagonal chevrons; ventrally pallid with brown areas near spinnerets, in two transverse bands just behind centre and near posterior booklung covers.

**Carapace.** Pilosity: light cover of fine brown hairs; striae all broad, distinct, glabrous. Bristles: no erect black beside posterior striae; 6 anteromedially and 10-15 in band beside caput; 1 long thick and few finer between PME, and 5 long thick and few finer between ALE; few short fine hairs on lateral margins. Fovea short, deep, distinctly procurved.

**Eyes.** Tubercle low. Group occupies 0.30 of head-width; front width, back width, length, 40, 52, 39, respectively. Back row slightly

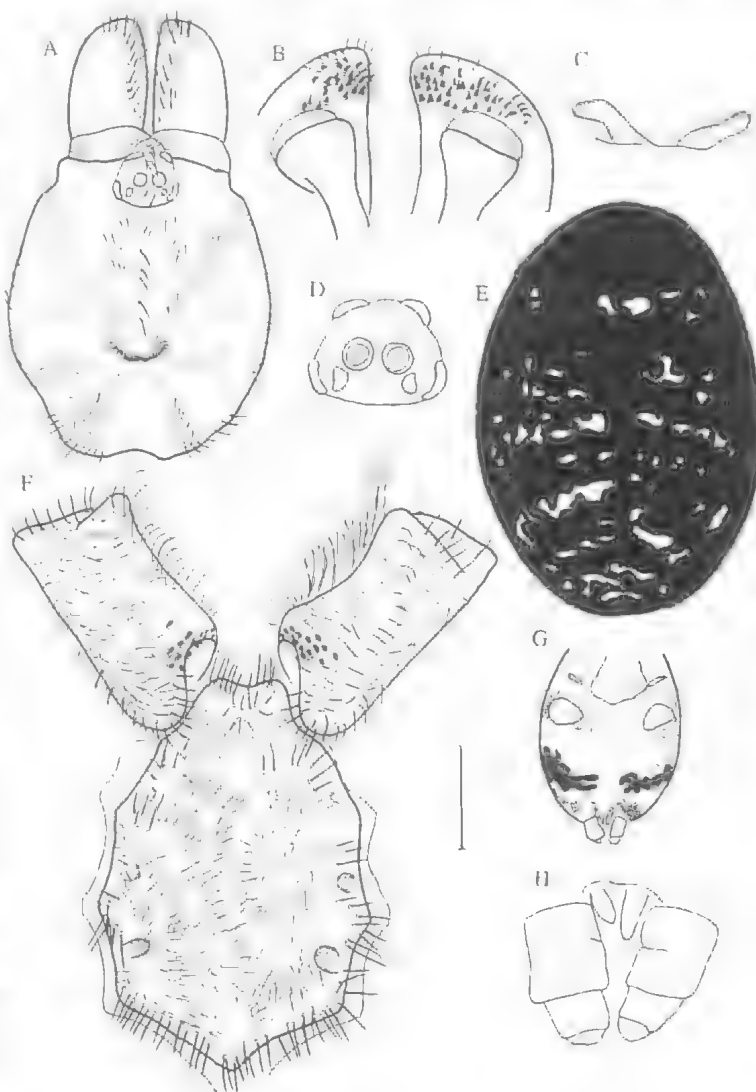


FIG. 66. *Moruga insularis* sp. nov., holotype ♀ (QMS19664). A, carapace & chelicerae, dorsal view; B, apical chelicerae showing rastellum; C, spermathecae; D, eyes, dorsal view; E, G, abdomen, dorsal (E) & ventral (G) view; F, sternum, maxillae, labium & chelicerae, ventral view; H, spinnerets, ventral view. Scale line = 4mm (G); 2mm (A, E); 1mm (B, D, F, H); 0.5mm (C).

procurved, MOQ front width, back width, length, 28, 33, 20, respectively. AME:ALE:PME:PLE, 12:14:9:16. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.9; ALE-PLE, 1.3; PME-PME, 1.8; PME-PLE, 0.2; ALE-ALE, 1.1.

**Chelicerae.** With narrow band of long brown bristles prodorsally, laterally a band of short hairs. Rastellum a low but distinct mound with c.10-15 short coniform spines and 30-40 behind them and laterally across fang edge. Furrow promargin with 1 small distal and 7 large teeth, basomesally with 10 small teeth extending to c. half length of furrow and c.15 granules.

**Labium.** 0.60 long, 1.00 wide; a narrow glabrous transverse groove anteriorly with 9 thick setae behind that, c.20 finer setae along back edge. Labiosternal suture is two sigilla joined medially.

**Maxillae.** 1.64 long in front, 2.44 long behind, 1.16 wide; with 14-18 cuspules in inner angle. Heel slightly produced; anterior lobe indistinct.

**Sternum.** 3.52 long, 2.76 wide. Sigilla: posterior pair submarginal, oval; others small, oval, marginal. Distinct pallid, asetose, sclerotised border (0.18-0.25mm wide) around sternum and projecting posteriorly between coxae IV.

**Legs.** Basifemoral thorns absent. 3 thorn spines on patellae III. Preening combs: 1 of 3 setae on retroventral III, IV. Legs 1, II noticeably more slender than III, IV.

	I	II	III	IV	Palp
Femur	3.50	3.38	3.19	4.50	2.63
Patella	2.50	2.44	2.19	2.69	1.88
Tibia	2.25	2.13	1.94	3.13	1.56
Metatarsus	1.56	1.56	2.13	3.63	—
Tarsus	1.25	1.31	1.00	1.25	1.56
Total	11.06	10.82	10.45	15.20	7.63

**Scopula.** Metatarsi: I, II, full, dense, entire; III, IV, in distal 1/3 (III)-1/5 (IV), in two sparse triangles. Tarsi: I, II, full, dense, entire; III, IV, divided by setal band 6-12 wide.

**Spines.** I: fe p1, d4w, pa 0, ti v3w, me v1. II: fe p1, d4w, pa 0, ti p1, v5w, me v1; III: fe d1w, r1w, pa p3 thorns, ti p1, r2, v6, me p2, r2, v3. IV: fe d2w, r1w, pa 0, ti r2, v6, me p2, r2, v7. Palp, fe p1, d4w, pa 0, ti p1, v7.

**Claws.** 2 small teeth medially on I, on IV and palp, bare; palpal claw much smaller (c.half) than other claws and tufts.

**Trichobothria.** Two rows, each of c.7 for half length of tibiae; c.12 on metatarsi in curving row

forming distal cluster; c.3 small clavate and c.16 filiform on tarsi.

**Spermathecae.** Two, each a slender sinuous mound directed obliquely outward.

**Spinnerets.** PMS 0.50 long, 0.17 wide, 0.15 apart, and c.0.25 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 0.90, 0.40, 0.15, 1.45 long, respectively.

#### DISTRIBUTION & HABITAT

Known only from rainforest on the track beside Gayundah Ck, Hinchinbrook Island, NEQ.

***Moruga kimberleyi* sp. nov.**  
(Figs 121, 13N, 60, 67, Table 5)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, 2.5 km N of Face Point, Carson Escarpment, Kimberley region, 14°50'20"S 126°49'10"E, WA, 3 Jun 1988, BM (BYM K493), WAM92/287.

#### DIAGNOSIS

Differs from all other species of *Moruga* by the greater number of maxillary cuspules and the broad ridge of many strong setae on the upper prolateral half of coxae I-IV.

Rastellum distinct long, broad, rounded mound along inner edge ending beside fangs as rounded mound; c.10 short blunt spines on mound and many short sharp spines. PMS very small, evident. Maxillae with c.80-90 stout, pointed cuspules. Preening combs absent. Conical thorn setae on patellae and tibiae III. Many strong thorn setae on distal femora-prolateral patellae III, IV. Many short strong thorn setae on diagonal ridge from upper prolateral half of coxae I-IV. Spermathecae two, each a low broad mound with long slender lobe arising ventrally and apical enlargement. MALES. Unknown.

#### ETYMOLOGY

A noun in apposition taken from the broader feature of the type-locality, the Kimberley region.

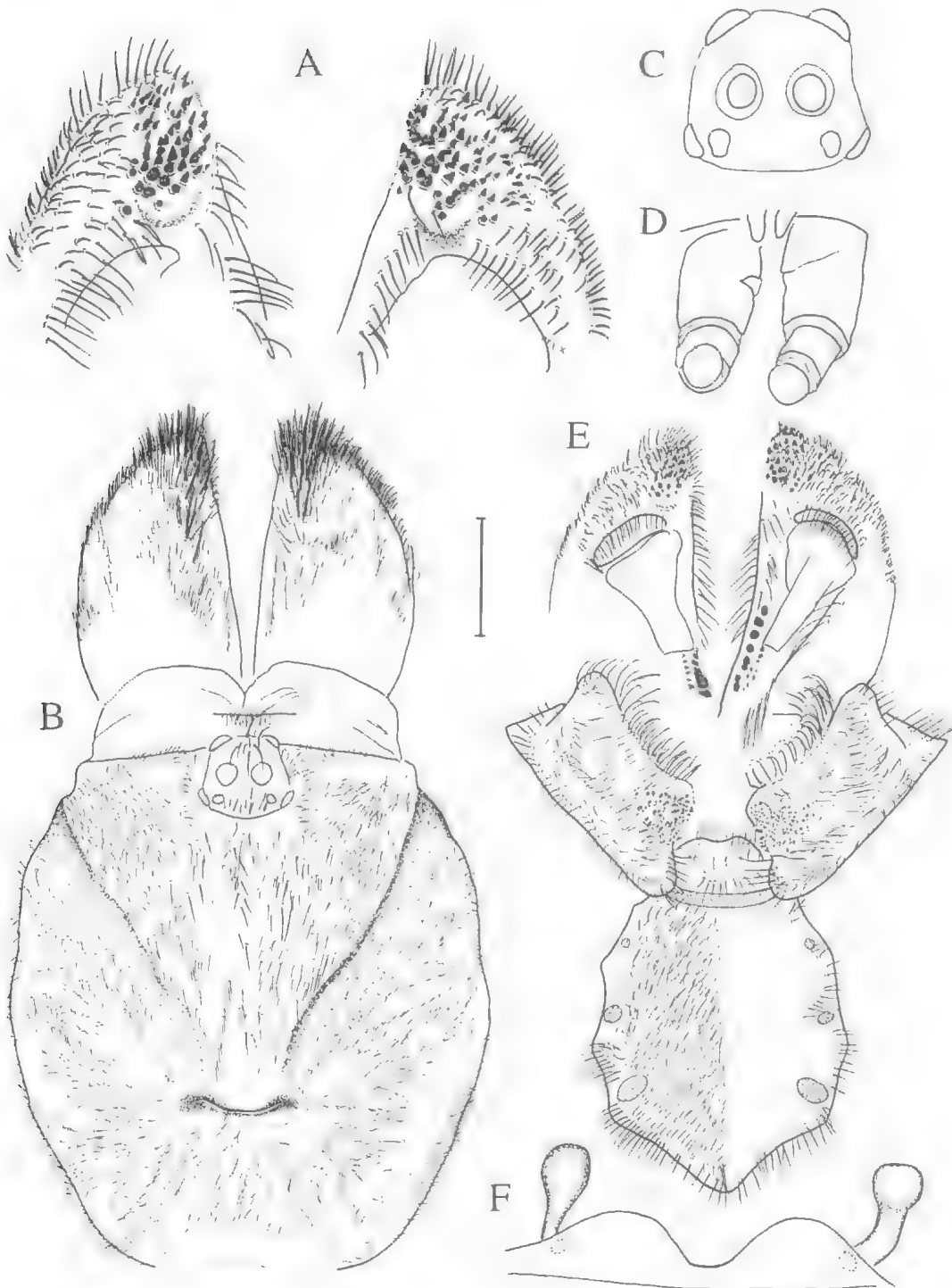
#### DESCRIPTION

HOLOTYPE FEMALE WAM 92/287

Carapace 9.60 long, 7.60 wide. Abdomen 15.20 long, 11.70 wide. Total length, 29.

**Colour.** Carapace yellow to orange brown, chelicerae orange brown, legs similar, not banded. Abdomen entirely fawn without pattern.

FIG. 67. *Moruga kimberleyi* sp. nov., holotype ♀ (WAM 92/287). A, apical chelicerae with rastellum, ventral view; B, carapace & chelicerae, dorsal view; C, eyes, dorsal view; D, spinnerets, ventral view; E, sternum, maxillae, labium & chelicerae, ventral view; F, spermathecae. Scale line = 1mm (A, C, D); 2mm (B, E); 0.5mm (F).



**Carapace.** Pilosity: light cover of fine brown hairs and bristles; lower cuticular shell below carapace also with long thick bristles; striae distinct, broad, glabrous, darker. Bristles: 3-4 thicker but slender erect black beside posterior striae; c.10 anteromedially and several thick in band beside caput; 4 (scars) thick and few finer between PME, and 6 (scars) thick and few finer between ALE; c.20 short recurved setae on sclerotised zone in front of AME; short hairs on lateral margins. Fovea broad, deep, procurved. Caput arched.

**Eyes.** Transverse tubercle edges distinct. Group occupies 0.22 of head-width; front width, back width, length, 71, 93, 44, respectively. Back row straight. MOQ front width, back width, length, 57, 68, 71, respectively. AME: ALE:PME:PLE, 22:22:11:17. Eye interspaces: AME-AME, 0.6; AME-ALE, 0.9; ALE-PLE, 1.8; PME-PME, 0.7; PME-PLE, 0.1; ALE-ALE, 1.4.

**Cheliceræ.** Many long and short bristles in narrow band prodorsally, laterally with fine setae. Rastellum on lower front face a distinct long, broad, rounded mound along inner edge ending beside fangs as rounded mound; c.10 short blunt spines on mound and c.50-60 short sharp spines for length of rastellum. Furrow promargin with 8 strong close blunt teeth on common darker keel, basomesally with c.20 small teeth basally and c.15 larger teeth extending for basal 3/4 of furrow. Fang short.

**Labium.** 0.93 long, 1.60 wide; uniform cover of long fine curved setae; no glabrous areas evident. Labiosternal suture a broad continuous groove.

**Maxillae.** 2.80 long in front, 3.80 long behind, 1.67 wide; with c.80-90 stout, pointed cuspsules in inner angle. Heel broadly produced; anterior lobe broad, distinct.

**Sternum.** 5.00 long, 4.13 wide. Sigilla: posterior pair c.13% of sternal width long, marginal; other, oval, small, marginal.

	I	II	III	IV	Palp
Femur	5.13	4.67	4.47	6.13	4.07
Patella	3.60	3.67	3.47	4.00	3.00
Tibia	3.33	2.87	2.53	4.20	2.40
Metatarsus	2.53	2.53	2.87	4.73	-
Tarsus	1.53	1.67	1.80	2.13	2.13
Total	16.12	15.41	15.14	21.19	11.60

**Legs.** Basifemoral thorns and preening combs absent. 2 conical thorn spines on patellae III and slightly longer laterally on tibiae III. Prolateral upper corners of femora-patellae III, IV with many thorn setae, rubbed off. Many short strong thorn setae on diagonal ridge from upper prolateral half of coxae I-IV.

**Scopula.** Metatarsi: I, II, full, very dense, entire; III, IV, in distal 1/2 (III)-1/4 (IV), divided by setal band. Tarsi: I, II, full, very dense, entire; III, IV divided by narrow setal band 6-8 (III), 8-10 (IV) wide.

**Spines.** I: fe p1, rest 0, ti: fe p1, rest 0. III: fe r1, pa p2 (thorns), ti p1, r3, v2, me p3, r2, v7. IV: fe 0, pa 0, ti r1, v2, me p3, r2, v7. Palp, fe p1, pa 0, ti p3, v4.

**Claws.** All bare; leg claws slightly shorter than tufts; tufts similar diameter to tarsi; palpal claw c.1/2 height of tufts.

**Trichobothria.** Two rows, each of c.10 for length of tibiae; c.14 on metatarsi in straight diagonal row confined to distal 2/3; c.6 small clavate and 20 filiform in triangular area distally on tarsi.

**Spermathecae.** Two, each a low broad mound with long slender lobe arising ventrally and apical enlargement.

**Spinnerets.** PMS very small, evident; 0.42 long, 0.16 wide, 0.27 apart, and c.0.19 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 1.71, 0.81, 0.47, 2.99 long, respectively.

#### DISTRIBUTION & HABITAT

'Rainforest' just north of Face Point, Carson Escarpment, Kimberley region, WA.

#### *Moruga thorsborneorum* sp. nov. (Figs 60, 68, Table 5)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Bellenden Ker Rd, Cableway Base Stn, NEQ, 17°16'S 145°54'E, 100m, in rainforest, 1-7 Nov 1981, EARTHWATCH Expedition & Queensland Museum, QMS19537.

#### DIAGNOSIS

Females differ from those of *M. wallaceae* by more maxillary cuspsules, having preening combs and scopula on metatarsi III (1/3)-IV (1/5), more twisted spermathecae and the pallid venter.

Rastellum strong, a produced spinose mound on inner corners, 60-80 short strong curved spines. PMS small, distinct. c.30 cuspsules on maxillae. Preening combs on metatarsi III, IV. Many strong thornlike setae, not spines, on distal femora-prolateral patellae IV. MALES. Unknown. FEMALES. Spermathecae two, each a sinuous lobe, twisting sharply just before ending in enlarged ovoid lobes.

#### ETYMOLOGY

For Arthur (deceased) and Margaret Thorsborne, renowned naturalists whose bound-

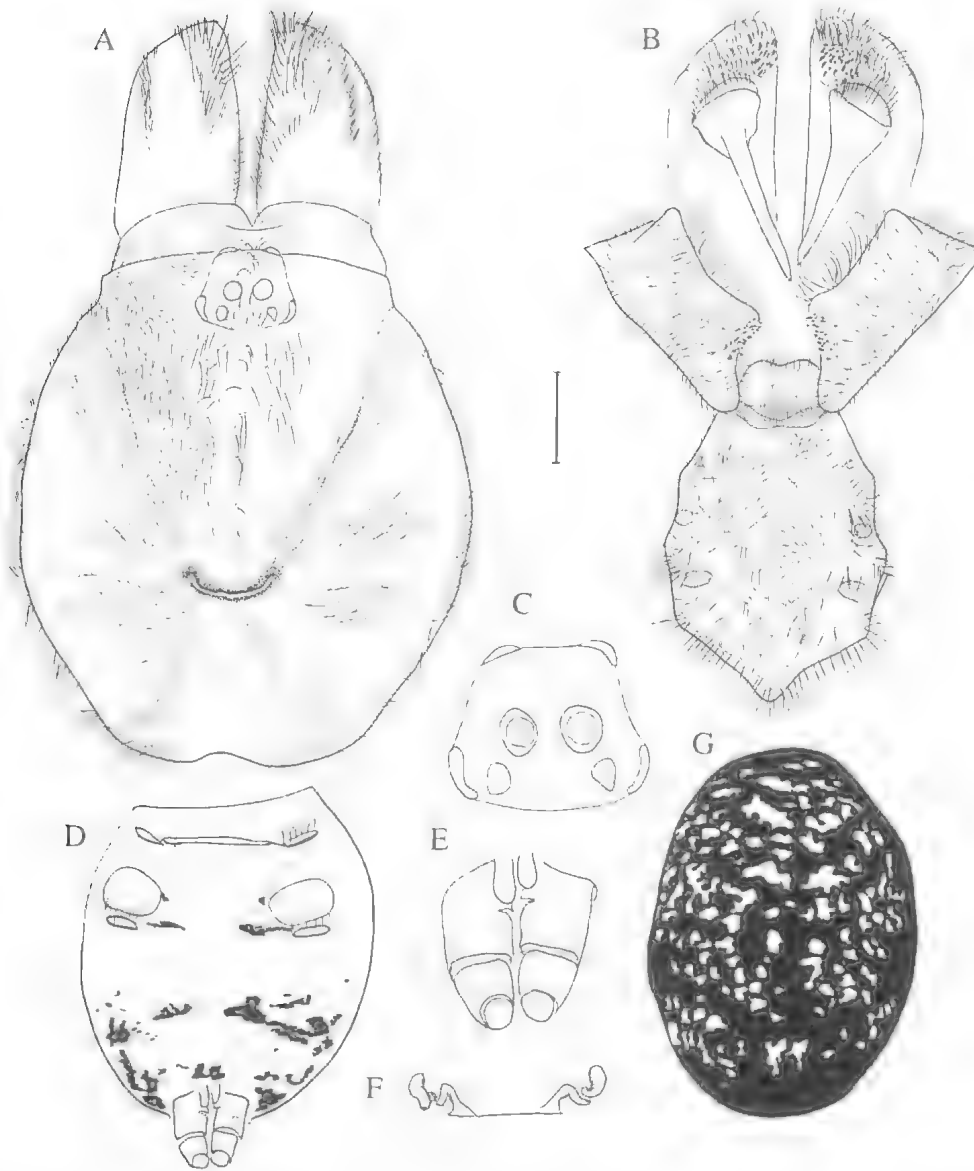


FIG. 68. *Moruga thorsborneorum* sp. nov., holotype ♀ (QMS7680). A, carapace & chelicerae, dorsal view; B, sternum, maxillae, labium & chelicerae, ventral view; C, eyes, dorsal view; D, G, abdomen, ventral (D), dorsal view (G); E, spinnerets, ventral view; F, spermathecae. Scale line = 1mm (A, B); 2mm (D, G); 0.5mm (C, E, F).

less energies have ensured that many important areas of north Queensland are nature reserves.

#### DESCRIPTION

##### HOLOTYPE FEMALE QMS19537

Carapace 10.90 long, 9.07 wide. Abdomen 14.40 long, 11.70 wide. Total length, 32.

*Colour.* Carapace, chelicerae, and legs reddish brown without bands. Abdomen dorsally dark brown with lighter brown irregular spots forming 3 pairs of larger grouped spots posteriorly; ventrally almost entirely pallid, with narrow brown transverse areas medially, in front of spinnerets, and near posterior booklung covers.

**Carapace.** Caput arched. Pilosity: caput with short fine grey hairs and slightly longer laterally; striae distinct, darker, with a line of brown hair along margins, posterior lobes with long brown hairs; no thicker bristles beside posterior striae; c.7 thick black and several finer bristles anteromedially and many long fine beside caput; 2 long thick bristles and several finer between PME, and 4 long thick and several finer between ALE. Fovea deep, distinctly procurved.

**Eyes.** Tubercle very low, no demarcation evident laterally, slope distinct posteriorly. Group occupies 0.26 of head-width; front width, back width, length, 44, 62, 48, respectively. Back row straight. MOQ front width, back width, length, 34, 42, 26, respectively. AME:ALE:PME:PLE, 12:14:8:15. Eye interspaces: AME-AME, 1.3; AME-ALE, 2.8; ALE-PLE, 4.2; PME-PME, 4.3; PME-PLE, 0.3; ALE-ALE, 2.5.

**Cheliceræ.** Many short black bristles prodorsally, laterally a glabrous zone and then an area of fine setae. Rastellum strong, a produced spinose mound on inner corners, 60-80 short strong curved spines, some tips broken on inner triangle. Interface only with setae. Furrow promargin with 8 large spaced teeth, basomesally with 1 small strong tooth and 20-30 smaller teeth, extending for 3/5 of furrow. Fangs strong smooth, no modifications evident.

**Labium.** Large; 1.67 wide, 1.14 long. Lightly hirsute, many similar setae over posterior 4/5. Labiosternal suture a continuous groove.

**Maxillae.** 2.93 long in front, 4.40 long behind, 1.87 wide; with c.33-35 cuspules in inner angle. Heel produced; anterior lobe small, indistinct.

**Sternum.** Narrow; 6.33 long, 4.80 wide. Sigilla moderately large; posterior, transversely oval, 0.48 long, marginal, in deep groove from edge; middle pair oval, marginal, c.0.35 long; anterior pair small, oval, marginal.

	I	II	III	IV	Palp
Femur	6.53	6.33	5.80	7.80	5.00
Patella	4.53	4.67	4.07	4.80	3.47
Tibia	4.20	4.07	3.27	5.53	2.73
Metatarsus	2.87	2.93	4.13	6.67	
Tarsus	2.00	2.07	2.13	2.33	3.07
Total	20.13	20.07	19.40	27.13	14.27

**Legs.** I, II more slender than III, IV. Many strong thorn-like setae on adjacent areas of distal femora and prolateral patella IV. Preening combs: 1 of 3 distinct setae on each of III, IV, retroventrally.

**Scopula.** Occupies more than 1/2 diameter of legs I, II. Metatarsi: I, II, full, dense, entire; III, IV, divided in distal 1/3 (III)- 1/5 (IV). Tarsi: I, II,

full, dense, entire, pad continuous with tufts; III, IV, full, dense, divided by setal band 8-10 wide.

**Spines.** I: fe p1, pa 0, ti v4w, me 0. II: fe p1, pa 0, ti p2, v4w, me 0. III: fe p1, r1, pa p4, ti p2, r3, v7, me p4, r3, v7. IV: fe r1w, pa 0, ti r2, v10, me p4, r3, v8. Palp: fe p1, pa 0, ti p2 v7.

**Claws.** 1 small tooth on medial keel (I) to no teeth (IV); all leg claws of similar size and extend above tufts; palpal claw much reduced, bare.

**Trichobothria.** Two rows, each of 8-10 for 1/2 length of tibiae; c.25 on metatarsi in proximally curved row; c.4 small clavate and 10-15 filiform on tarsi.

**Spermathecae.** Two, each a sinuous lobe, twisting sharply just before enlarged ovoid lobes.

**Spinnerets.** PMS small but distinct; 0.93 long, 0.42 wide, 0.08 apart, c. 0.29 of basal PLS in diameter. PLS length of basal, middle, apical, and total articles 1.59, 0.89, 0.57, 3.05, respectively.

#### DISTRIBUTION & HABITAT

Rainforest at eastern base (100m) of Mt Bellen-den Ker, NEQ.

#### *Moruga wallaceae* sp. nov.

(Figs 12G, I, 13 E, F, 60, 69, 70. Table 5)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, South Johnstone, 17°36'S 146°00'E, in tunnel nest among railway lines, Sep 1989, G. Vollmerhausen, QMS17825; paratype ♀, Wangan, 17°35'S 146°01'E, NEQ, 13 Oct 1991, N. Bryde (Q. D.P.I.), QMS19422. All in NEQ.

#### DIAGNOSIS

Females differ from those of *M. fuliginea* in the less pronounced rastellum and from ♂♂ of *M. thickthorni* in the more spinose rastellum, the normal large PME, and the patterned venter. Differs from *M. thorsborneorum* by fewer cuspules (12-18 vs 35), the lack of preening combs and of longer scopula on metatarsi III, the reflexed form of spermathecae, and the dark venter.

Rastellum a distinct spinose mound, PMS well developed. 12-18 cuspules in narrow band on maxillae. Preening combs absent. MALES. Unknown. FEMALES. Spermathecae two, each a sinuous lobe ending in enlarged ovoid lobes.

#### ETYMOLOGY

For Dr Carden Wallace, Curator Manager of the Museum of Tropical Queensland, a branch of the Queensland Museum.



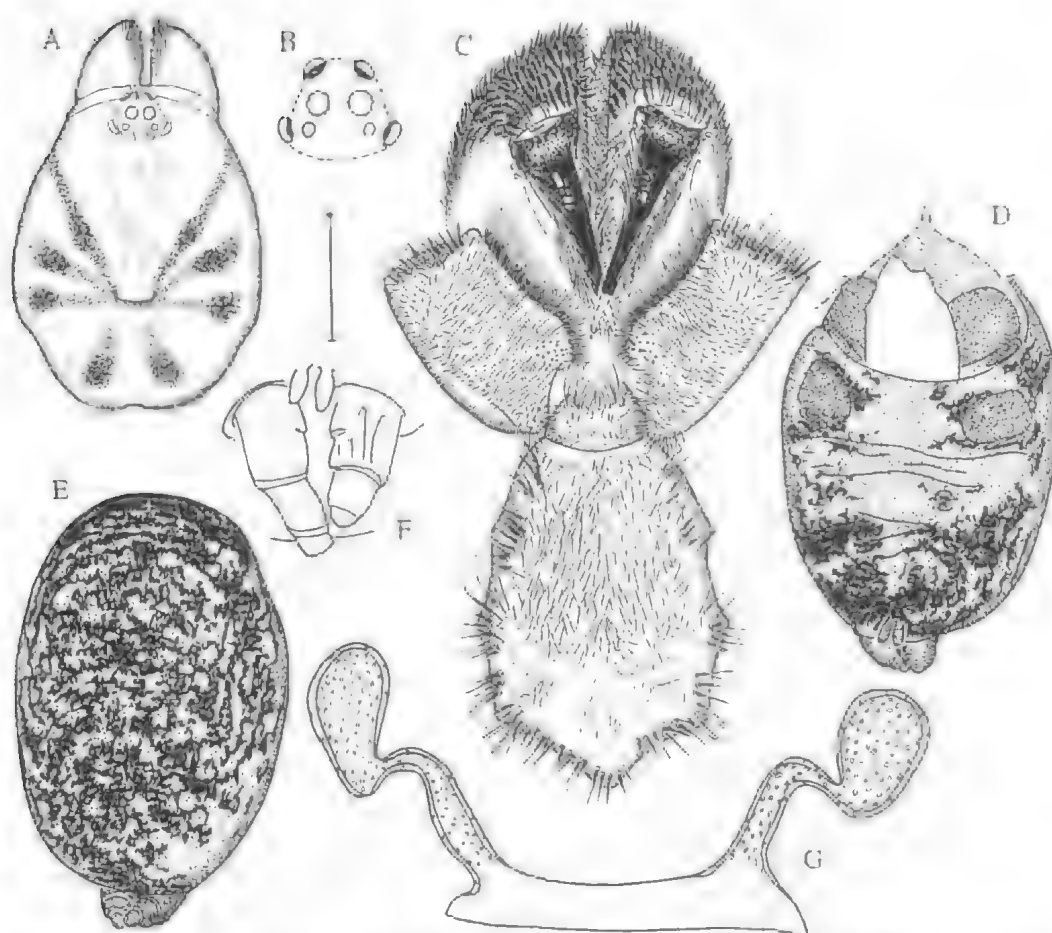


FIG. 69. *Moniga wallaceae* sp. nov., holotype ♀ (QMS17825). A, carapace & chelicerae, dorsal view; B, eye group dorsal view; C, chelicerae, sternum, maxillae & labium, ventral view; D, E, abdomen, ventral (D), dorsal views (E); F, spinnerets, ventral view; G, spermathecae, holotype. Scale line = 4mm (A, D, E); 2mm (B, C, F); 0.25mm (G).

#### DESCRIPTION

##### HOLOTYPE FEMALE QMS17825

(QM19422 in square parentheses)

Carapace 10.80 [5.50] long, 9.38 wide. Abdomen 13.80 [8.80] long, 9.38 wide. Total length, 29 [16].

**Colour.** Carapace, chelicerae, and legs dark reddish brown without darker markings or annulations. Abdomen dorsally dark brown with lighter brown irregular spots; ventrally dark brown, fine soil adhering, with lighter brown areas medially.

**Carapace.** Pilosity: caput with short fine hairs, laterally, longer at half length of carapace; striae indistinct, with fine lines of brown hair along margins, posterior lobes with many, not dense, long brown hairs, carapace otherwise appears glabrous. Bristles: none beside posterior striae; 8-10 thick black and several finer anteromedially

and few long fine beside caput; 4 long thick and few finer between PME, and 8 long thick and few finer between ALE; fine golden hair in narrow line on lateral margins, hairs longer on posterior corner. Fovea deep, distinctly procurved.

**Eyes.** Tubercle very low, no demarcation evident laterally, slope gentle posteriorly. Group is 0.27 [0.35] of head-width; front width, back width, length, 51, 84, 60, respectively. Back row straight. MOQ front width, back width, length, 45, 50, 32, respectively. AME:ALE:PME:PLE, 20:20:11:19. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.9; ALE-PLE, 1.6; PME-PME, 1.6; PME-PLE, 0.4; ALE-ALE, 0.9.

**Chelicerae.** Many short black bristles prodorsally, laterally a glabrous zone and then an area, not band, of fine setae. Rastellum strong, a raised spinose mound on inner corners, 60-80 short

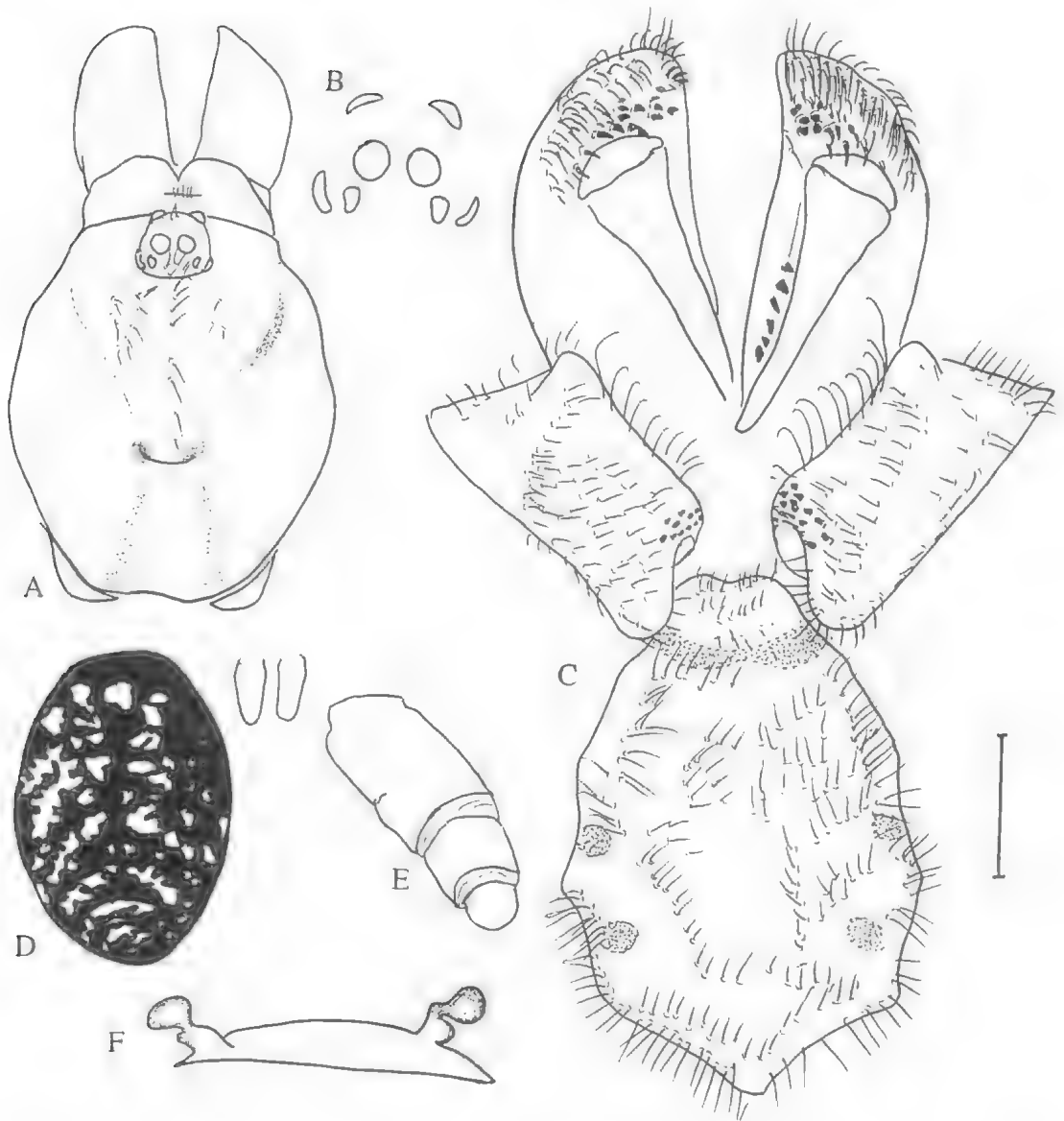


FIG. 70. *Moruga wallaceae* sp. nov., small ♀ (QMS19422). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, chelicerae, sternum, maxillae & labium, ventral view; D, abdomen, dorsal view (D); E, spinnerets, ventral view; F, spermathecae. Scale line = 4mm (D); 2mm (A); 1mm (B, C, E); 0.25mm (F).

strong curved spines, some tips broken on inner triangle. Interface only with setae. Furrow promargin with 3 large distal and 5 smaller (one the most distal of all) spaced teeth, basomesally with 7 small strong teeth and 15-20 smaller teeth. Fangs strong smooth, no modifications evident.

**Labium.** 1.00 long, 1.44 wide; large. Lightly hirsute, 5 setae in line across midpoint. Labiosternal suture a continuous narrow groove.

**Maxillae.** 2.50 long in front, 3.44 long behind, 1.69 wide; with c.12-18 blunt cuspsules in inner angle. Heel produced; anterior lobe small, indistinct. Lyra absent.

**Sternum.** Narrow; 5.75 [3.28] long, [2.48] 4.06 wide. Sigilla large; posterior, transversely oval, 15% of sternal width long, submarginal; middle pair, longitudinally oval, marginal, about 13% of

sternal width long; anterior pair small, oval, marginal.

**Legs.** Basifemoral thorns absent, 3 conical thorn spines on prolateral patella III; cluster of strong setae along femora-patellae III, IV prolateral junctions. Preening combs: 1 of 3 strong setae on retroventral III, IV. Tarsi I, II incrassate. Many strong thorn-like setae, not spines, on distal femora-prolateral patellae IV and adjacent areas.

	I	II	III	IV	Palp
Femur	5.56	5.44	5.00	6.69	4.31
Patella	4.13	3.94	3.38	4.19	3.00
Tibia	3.56	3.25	2.94	4.56	2.38
Metatarsus	2.50	2.50	3.31	5.44	-
Tarsus	1.63	1.69	1.44	1.94	2.19
Total	17.38	16.82	16.07	22.82	11.85

**Scopula.** So extensive as to occupy more than half leg diameter on legs I, II. Metatarsi: I, II, distal 3/4, dense, entire; III, IV, almost absent, in two very small bands of 30-50 hairs each in distal 1/8. Tarsi: I, II, full, dense, entire, pad continuous with tufts; III, IV, full, dense, divided by setal band 8-10 wide.

**Spines.** I: fe p1[0], d3w[0], pa 0, ti v2w[4], me v1. II: fe p1[0], d1w[0], pa 0, ti p3[0], v4w[5], me v1. III: fe r1[0], pa p3, r1, ti p2, r2, v7[5], me p3, r3, v7[5]. IV: fe r1w[0], pa r1w[0], ti r2, v7[8], me p4, r4[3], v10[8]. Palp: fe p1, pa 0, ti p3, v7.

**Claws.** 2 small teeth on medial keel (I) to no teeth (IV); all leg claws of similar size and extend above tufts; palpal claw much reduced, bare.

**Trichobothria.** Two rows, each of 8-10 for half length of tibiae; distal group of 8 + 8 in retrorow in distal 1/4 of I, long curved row for length on IV; c.4 small clavate and 10-15 filiform on tarsi.

**Spermathecae.** Two, each a sinuous lobe ending in enlarged ovoid lobes [each a long conical base, subapical constriction, with enlarged apex].

**Spinnerets.** PMS 0.88 long, 0.40 wide, 0.05 apart, and c.0.40 [0.28] of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 1.50, 0.70, 0.25, 2.45 long, respectively.

#### DISTRIBUTION & HABITAT

Dry, open forest, from South Johnstone and Wangan, just south of Innisfail, NEQ.

#### REMARKS

The paratype from nearby Wangan is half the size of the holotype and yet is adult. It provides a very good reference (although of no statistical significance) for the nature and extent of variation of different characters with different sizes. Hence, quantifiable character differences are included above and the specimen is figured.

#### *Ozicrypta* Raven, gen. nov.

##### DIAGNOSIS

Differs from the New Caledonian *Encyocrypta* in that the posterior median spinnerets are smaller, also the sternum is about as wide as long or wider, whereas in *Encyocrypta* it is longer than wide (Raven & Churchill, 1990). In ♀♀ *Ozicrypta*, the fovea is distinctly procurved whereas in *Encyocrypta* it is straight or only slightly curved. *Ozicrypta* differs from *Trittame* Koch and *Zophorame* Raven in having far fewer maxillary cuspules and from *Idiommatia* in lacking a stridulatory lyra and in the less hirsute carapace. In the field, *Ozicrypta* can be also distinguished from *Trittame*, *Zophorame*, and *Idiommatia* by its mottled pattern on the dorsal abdomen rather than being uniformly brown or black.

##### DESCRIPTION

Carapace rounded, hirsute. Fovea short, straight (♂♂) to distinctly procurved (♀♀). Clypeus absent. Eyes in subquadrate to trapezoidal group on tubercle in 3 rows. Maxillary lyra absent. Maxillae with 3-30 cuspules grouped on inner corner; heel slightly produced; anterior lobes rounded. Cuspule microstructure: c.40-50µm in maximum diameter; intercrest distance, 0.6-1µm apart; profile, bilaterally uniform balloon; ridge direction, continuous over smooth crest, like thumbprints; cuspule interspace, 2 or more diameters. Rastellum absent to distinct but sessile; ♂♂ rarely with basomesal granules on cheliceral furrow. Labium wider than long, without cuspules. Sternum cordate, about as long as wide; 3 pairs of round, marginal sigilla. Females with few spines on legs I, II. Scopula usually entire on metatarsi and tarsi I and II, sometimes less extensive, rarely absent; thin and divided by setae, if present, on metatarsi III and IV. Basifemoral thorns present or absent (♀♀). Thorn spines on distal femora and patellae III, IV, sometimes present. Claws of ♂♂ with 1-2 rows of teeth on I, 1-2 rows on IV; ♀♀ with one row of teeth on paired claws medially. Claws on I, IV of similar size. Claw tufts well developed on 1/2 palp; palpal claw about as high as tufts or smaller (*O. noonamah*). Preening combs present or absent in ♂♂ ♀♀ on metatarsi III, IV. Dorsal abdomen mottled to entirely black; legs typically without annulations. Tibia I of ♂♂ with ventral distal spur and often with up-curved megaspine with small microspur opposed by slender down-curved megaspine laterally or unarmed. Palpal

	<i>croceola</i>	<i>filmeri</i>	<i>kroombit</i>	<i>macarthurae</i>	<i>mcdonaldi</i>	<i>microcauda</i>	<i>palmarum</i>	<i>reticulata</i>	<i>sinclairi</i>	<i>walkeri</i>	<i>wallacei</i>
Size of PMS	small	small	distinct	small	minute	minute	minute	small	v small	distinct	reduced
No. maxillary cuspules	10-28	10-25	11-15	8-10	20-22	6-13	25-35	5-9	8-24	16	10-18
Dorsal abdomen, pattern	mottled	mottled	mottled	mottled	fishbone	mottled	chevrons	mottled	mottled	mottled	mottled
Ventral abdomen, pattern	4 spot	pallid	mottled	2 spot	pallid	maculate	pallid	pallid	mottled	mottled	mottled
♂ Tibial spur position	distal	post-distal	?	distal	sub-distal	post-distal	?	sub-distal	post-distal	?	?
Tibial megaspine	long	long	?	short	subapical, short	thick, short	?	long	short	?	?
Spur size	conical	short, small	?	short	slender	large	?	low, wide	large	?	?
Upper megaspine	><short	short	?	long curved	short	short	?	long	short, curved	?	?
Tibial microspur	small	distinct	?	small	small	short	?	small	distinct	?	?
Palpal bulb	simple	wide	?	simple	simple	wide keeled	?	wide	wide	?	?
Keels on bulb	2 wide	6 low + 1	?	4 short	4 long	4 + 1 large	?	6 small + 1 wide	1 wide + 4 small	?	?
Embolus origin	distal	distal	?	distal	gradual	distal	?	distal	distal	?	?
Tooth rows: legs I(IV)	2(2)	2(1)	?	2(1)	2(2)	2(2)	?	2(2)	2(2)	?	?
♀ Spermathecal lobes	1 + 1	1 + 1	1 + 1	?	?	1 + 1	1 + 1	?	1 + 1	1 + 1	1 + 1
Spermathecae shape	antennate domes	lobed domes	mushroom shape	?	?	antennate domes	Y-shaped	?	antennate domes	antennate domes	antennate domes
Rastellum	absent	absent	absent	absent	absent	weak	weak	absent	absent	absent	aspirose mound
Paucal thorns III(IV)	absent	absent	weak	absent	absent	absent	absent	absent	absent	present	absent
Basifemoral thorns	few	P, I-IV	absent	?	?	small	absent	?	I, II	absent	present
Thia cf Patella I	less	greater	less	?	?	less	less	?	greater	less	less
Scapula metatarsi III(IV)	1/2(1/3)	2/3(1/3)	1/3(absent)	1/3(1/4)	1/3(1/4)	1/3(1/4)	1/6-(absent)	1/4(absent)	1/3(1/5)	1/3(1/5)	1/2(1/4)
Preening combs III(IV)	present	pro & retro	present	absent	IV only	present	absent	absent	present	pro & retro	present
Autopomorphy		coxal thorns	spermathecae				'flat' maxillae	spur		combination	
Habitat	rainforest	rainforest	eucalypt forest	rainforest	woodland	vine thicket	woodland	rainforest	rainforest	?	vine thicket
Burrow type	barrel tube?	?	barrel tube	?	?	short tube	?	?	?	?	short flask?
Burrow door	2 end-doors?	?	2 end-doors	?	?	thin flap doors	?	?	?	?	thin flap?
Distribution	Coastal SEQ	Gympie region, SEQ	Kroombit Tops, MEQ	Mt Bauple, SEQ	Ambathala, SEQ	SEQ	Palm Ck, NT	Eungella, MEQ	Deepwater Ck, SEQ	Mil-merran, SEQ	Yeppoon, MEQ

Table 6. *Ozicrypta* species with distinct posterior median spinnerets.

	<i>australis-borealis</i>	<i>clarki</i>	<i>elyneae</i>	<i>combeni</i>	<i>digglesi</i>	<i>etna</i>	<i>eungella</i>	<i>hollinsoe</i>	<i>lawlessi</i>	<i>littlerum</i>	<i>noenamah</i>	<i>pearri</i>	<i>tuckeri</i>	<i>wrightae</i>
No. maxillary cuspules	4-7	7	23-28	4-7	5-8	11-15	13-25	4-5	5-8	10-12	7-11	c.16	c.18	c.6
Dorsal abdomen, pattern	mottled	mottled	mottled	mottled	mottled	mottled	mottled	mottled	mottled	mottled	maculate	4 paired spots	black	mottled
Ventral abdomen, pattern	dark Vee	dark Vee	pallid	pallid	pallid	4 spots	mottled	4 spots	pallid	pallid	brown Vee	pallid	dark	pallid
♂ Tibial spur position	?	distal	?	distal	?	distal	?	distal	?	?	?	distal	distal	?
Tibial megaspine	?	short	?	short	?	stout	?	short	?	?	?	long	long curved	?
Spur size	?	lee conical	?	small	?	low	?	small	?	?	?	low	low	?
Upper megaspine	?	long curved	?	long, curved	?	thin, small	?	elongate	?	?	?	long	short	?
Tibial microspur	?	minute	?	absent	?	small	?	absent	?	?	?	small	v. small	?
Palpal bulb	?	lee twisted	?	lee twisted	?	wide	?	wide	?	?	?	simple	simple	?
Keels on bulb	?	2 wide	?	2 wide	?	multi + 1	?	2 large	?	?	?	4 long fine	none	?
Embolus origin	?	distal	?	distal	?	lee	?	distal	?	?	?	gradual	sudden	?
Tooth rows: leg I(IV)	?	1(1)	?	2(2)	?	1(1)	?	2(2)	?	?	?	2(2)	?	?
♀ Spermathecal lobes	1 + 1	?	1 + 1	?	1 + 1	1 + 1	1 + 1	?	1 + 1	1 + 1	1 + 1	?	?	1 + 1
Spermathecae shape	antennate domes	?	low mounds	?	antennate domes	antennate domes	Y-shaped	?	low Y-shape	lobed mounds	lobed mounds	?	?	lobed mounds
Rastellum	low mound	aspinose mound	absent	weak	spinose mound	absent	low spinose mound	low mound	spinose mound	lge spinose mound	low aspinose	absent	absent	weak
Porellal thorns III(IV)	absent	absent	absent	present	strong	absent	absent	strong	setal comb	v strong	strong	absent	absent	present
Basifemoral thorns	I, IV	?	weak	?	few	I, II, IV	absent	absent	only dorsal	I, II, IV	I-IV	?	?	absent
Tibia cf. Paella I	less	?	greater	?	greater	?	less	?	less	greater	equal	?	?	less
Scopula metatarsi III(IV)	1/2(1/3)	present	1/3(1/5)	1/3(absent)	1/2(1/4)	1/3	absent	1/3(1/5)	1/2-(absent)	1/3(1/5)	1/2(1/2)	1/6	absent	absent
Preening combs III(IV)	present	present	present	absent	present	pro & retro	present	present	absent	pro & retro	absent	absent	present	present
Autapomorphy	combination	bulb	combination	bulb	rastellum	bulb	spermathecae	bulb	dorsal basifemoral	'flat' maxillae	'flat' maxillae	combination	black abdomen	aspinose legs
Habitat	woodland	woodland	vine thicket	vine thicket	woodland	vine thicket	rainforest	woodland	vine thicket	woodland	woodland	woodland	woodland	rainforest
Distribution	King River, NT	Torres Strait	Finch Hutton, MEQ	40 Mile Scrub, NEQ	Wandavale, Stn NEQ	Eina Caves, MEQ	Engella NP, NEQ	Mt Chalmers, MEQ	Bowen, NEQ	Dry coastal, NEQ	Noenamah, NT	Mt Cleveland, NEQ	Mt Cleveland, NEQ	Mt Bellenden Ker, NEQ

Table 7. *Ozicrypta* species without posterior median spinnerets; see also *O. mcdonaldii* (Table 6).

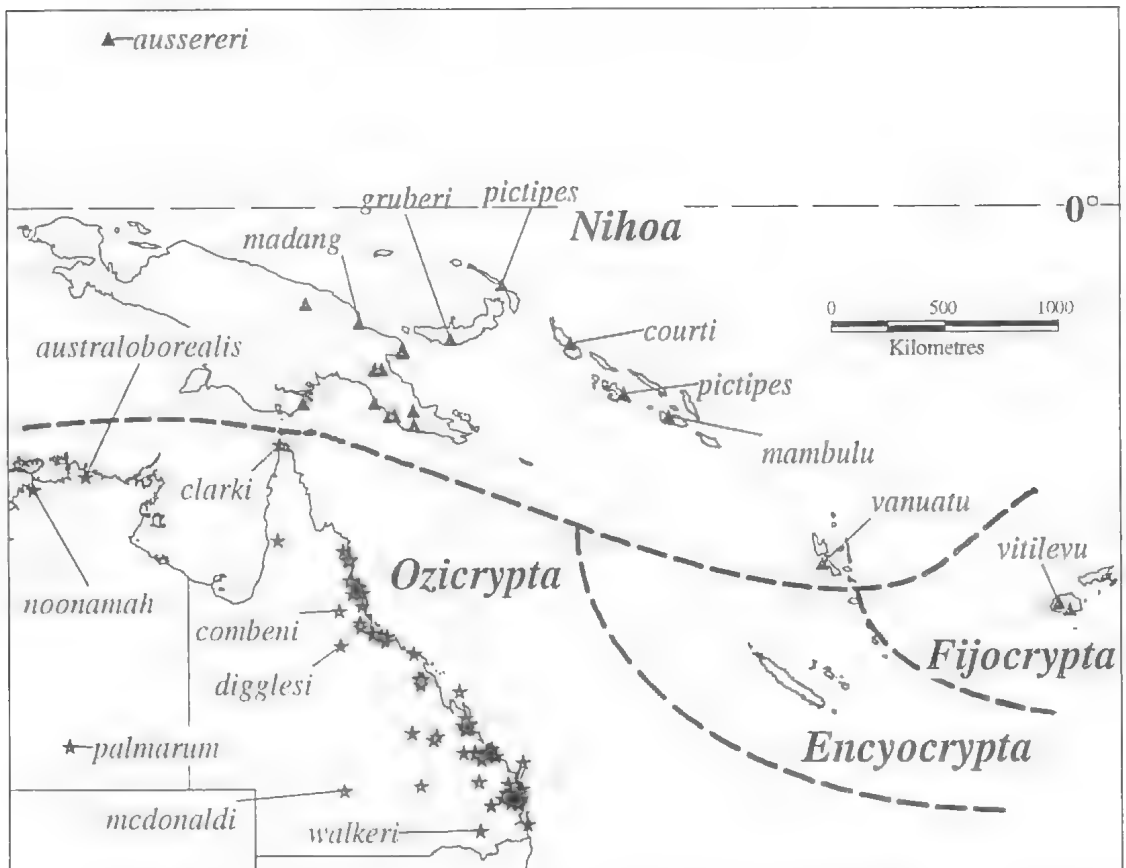


FIG. 71. Records of *Ozicrypta* in Australia & *Fijocrypta* gen. nov. & *Nihoa* in western Pacific.

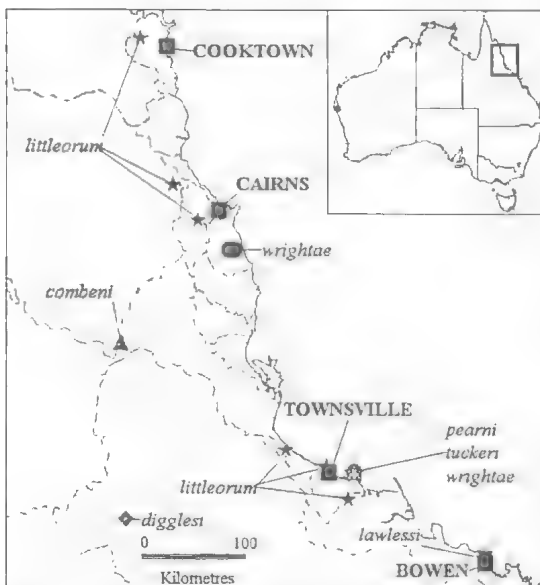


FIG. 72. Records of *Ozicrypta* in northern Queensland with catchment boundaries.

bulb simple, pyriform, with one or more keels on embolus, with broad spiral. Cymbium dimorphic, lobes subequal; sometimes retrolaterally concave when viewed from above. Spermathecae of ♀♀ consist of one or two pairs of dimorphic lobes arising from separated basal mounds. Two to four spinnerets; PMS (if present) up to 0.5 times width of PLS, sometimes represented only by minute caps.

#### TYPE SPECIES

*Ozicrypta cooloola* Raven & Churchill, sp. nov.

#### ETYMOLOGY

From a random combination of letters conveying a 'nickname' of Australia, Oz. The gender is feminine.

#### DISTRIBUTION & HABITAT

*Ozicrypta* is known from eastern, central and northern Australia. The spiders are found com-



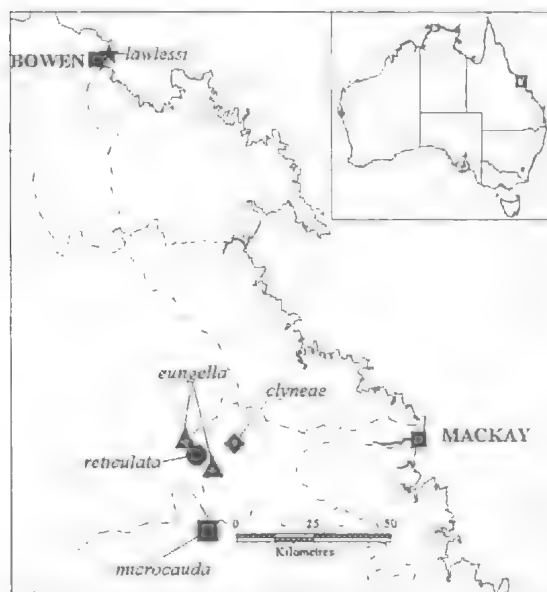


FIG. 73. Records of *Ozicrypta* in central coastal Queensland with catchment boundaries.

monly in rainforest but occur also in dry sclerophyll. Few species are known outside of Queensland although *O. reticulata* (Koch) was erroneously recorded from Sydney, New South Wales (Koch, 1873), no barychelids occur so far south on the coast.

#### INCLUDED SPECIES

*Ozicrypta australoborealis* Raven & Churchill, sp. nov.  
*Ozicrypta clarki* Raven & Churchill, sp. nov.  
*Ozicrypta clyneae* Raven & Churchill, sp. nov.  
*Ozicrypta cooloola* Raven & Churchill, sp. nov.  
*Ozicrypta combeni* Raven & Churchill, sp. nov.  
*Ozicrypta digglesii* Raven & Churchill, sp. nov.  
*Ozicrypta etna* Raven & Churchill, sp. nov.  
*Ozicrypta eungella* Raven & Churchill, sp. nov.  
*Ozicrypta filmeri* Raven & Churchill, sp. nov.  
*Ozicrypta hollinsae* Raven & Churchill, sp. nov.  
*Ozicrypta kroombii* Raven & Churchill, sp. nov.  
*Ozicrypta lawlessi* Raven & Churchill, sp. nov.  
*Ozicrypta littleorum* Raven & Churchill, sp. nov.  
*Ozicrypta mcarthurae* Raven & Churchill, sp. nov.  
*Ozicrypta mcdonaldii* Raven & Churchill, sp. nov.  
*Ozicrypta microcauda* Raven & Churchill, sp. nov.  
*Ozicrypta noonamah* Raven & Churchill, sp. nov.  
*Idioctis palmarum* Hogg, 1901  
*Ozicrypta pearni* Raven & Churchill, sp. nov.  
*Encyocrypta reticulata* Koch, 1874  
*Ozicrypta sinclairi* Raven & Churchill, sp. nov.  
*Ozicrypta tuckeri* Raven & Churchill, sp. nov.  
*Ozicrypta wallacei* Raven & Churchill, sp. nov.  
*Ozicrypta walkeri* Raven & Churchill, sp. nov.  
*Ozicrypta wrightae* Raven & Churchill, sp. nov.

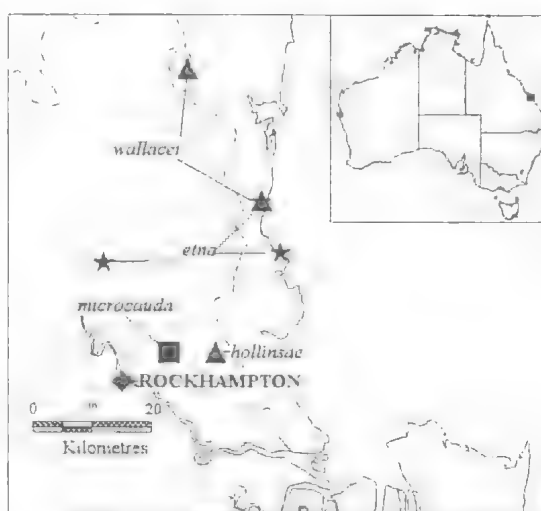


FIG. 74. Records of *Ozicrypta* in central coastal Queensland with catchment boundaries.

#### KEY TO OZICRYPTA, & SIMILAR MANDJELIA, MORUGA, SEQOCCRYPTA & SYNOTHELE

##### MALES

- 1 Posterior median spinnerets absent . . . . . 2  
 Posterior median spinnerets present, if small . . . . . 7
- 2(1). One row of teeth on claws of leg I . . . . . 3  
 Two rows of teeth on claws of leg I . . . . . 4
- 3(2). Keels on palpal bulb small (Fig. 85A); small spiders, carapace length c.4mm . . . . . *O. etna*  
 Keels on palpal bulb large (Fig. 79G); larger spiders, carapace length c.8mm . . . . . *O. clarki*
- 4(2). Tibia I with prominent spur (Fig. 82B) . . . . . 5  
 Tibia I without spur . . . . . *Fijocrypta vitilevu*
- 5(4). Tibial microspur absent . . . . . 6  
 Tibial microspur present . . . . . 7
- 6(5). Rastellum a spinose mound . . . . . *O. hollinsae*  
 Rastellum absent . . . . . *O. combeni*
- 7(5). Scopula absent on all legs . . . . . *O. tuckeri*  
 Scopula present on some legs . . . . . *O. pearni*
- 8(5). Embolus tapers gradually to tip . . . . . 9  
 Embolus constricts quickly near tip (Fig. 76H) . . . . . 10
- 9(8). Ridges or keels confined to distal third of palpal bulb; posterior median spinnerets small, distinct . . . . . *O. mcarthurae*  
 Ridges for half of bulb; posterior median spinnerets minute, if present . . . . . *O. mcdonaldii*
- 10(8). A pair of small opposed keels confined to distal third of bulb . . . . . *O. cooloola*  
 One large and several small keels for at least distal half of bulb . . . . . 11

- 11(10). Ventral face of coxae I covered with short curved bristles (Figs 88A, 89B) . . . *O. filmeri*  
Setation of ventral coxae I like that of adjacent coxae . . . . . 12
- 12(11). Posterior median spinnerets vestigial (Fig. 96B) . . . . . *O. microcauda*  
Posterior median spinnerets present, small . . . . . 13
- 13(12). Upper megaspine elongate, much more than 3 times length of microspur (Fig. 101E) . . . . . *O. reticulata*  
Upper megaspine only about 3 times length of microspur . . . . . *O. sinclairi*
- FEMALES**
1. Posterior median spinnerets absent . . . . . 2  
Posterior median spinnerets present, if very small . . . . . 9
- 2(1). Strong conical setae or spines near joint of femur-patella III or IV . . . . . 3  
No such setae or spines near joint of femur-patella . . . . . 6
- 3(2). Rastellum a very pronounced spinose mound (Fig. 93C) . . . . . 21  
Rastellum mound well developed (Fig. 83C) but not so much as above . . . . . 4
- 4(3). Palpal claw about as high as tufts or higher . . . . . 5  
Palpal claw distinctly smaller than tufts . . . . . *O. noonamah*
- 5(4). Spermathecae with roughly cylindrical lobes on mound (Fig. 83E) . . . . . 22  
Spermathecae with distinctly bulbous lobes on mound (Fig. 78H) . . . . . *O. australoborealis*
- 6(2). Average of less than 10 cuspules on maxillae . . . . . *O. wrightae*  
More than 10 cuspules on maxillae . . . . . 7
- 7(6). Rastellum distinct (Fig. 86G); metatarsi III not scopulate . . . . . *O. eungella*  
Rastellum weak (Fig. 80B); metatarsi III variable . . . . . 8
- 8(7). Tibia I clearly longer than patella . . . . . *O. clyneae*  
Tibia I clearly shorter than patella . . . . . *O. ema*
- 9(1). Rastellum spinose (Fig. 54B) . . . . . 10  
Rastellum absent to weak . . . . . 11
- 10(9). Metatarsi I shorter than tarsi . . . . . *Mandjelia qantas*  
Metatarsi I much longer than tarsi . . . . . *O. wallacei*
- 11(10). Basifemoral thorns at least on I, II) . . . . . *Seqocrypta hamlynharrii*  
Basifemoral thorns entirely absent . . . . . 12
- 12(11). Metatarsi IV without scopula or scopula only very small single cluster . . . . . 13  
Metatarsi IV scopulate for distal 1/5-1/6 . . . . . 14
- 13(12). Abdomen dorsally black, without pattern . . . . . *Moruga doddi*  
Abdomen dorsally mottled . . . . . 3
- 14(13). Spermathecae multilocular (Fig. 118G) . . . . . *Seqocrypta mckeowni*  
Spermathecae not multilocular . . . . . 15
- 15(14). Spermathecae Y-shaped (Fig. 99F) . . . . . *O. palmarum*  
Spermathecae mushroom-shaped (Fig. 91G) . . . . . *O. kroombii*
- 16(15). Posterior median spinnerets width about half (0.4-0.6) mid-width of basal segment of posterior lateral spinnerets . . . . . 17  
Posterior median spinnerets at most about one quarter (0.10-0.3) mid-width of basal segment of posterior lateral spinneret . . . . . 20
- 17(16). Spermathecae multilocular (Fig. 113E); preening combs absent . . . . . *Seqocrypta jakara*  
Spermathecae antennate domes (Fig. 106G); preening combs present . . . . . 18
- 18(17). Tibia I shorter than patella I . . . . . *O. walkeri*  
Tibia I clearly longer than patella I . . . . . 19
- 19(18). Ventral face of coxae I covered with short curved bristles (Figs 88A, 89B) . . . . . *O. filmeri*  
Setation of ventral coxae I like that of adjacent coxae . . . . . *O. sinclairi*
- 20(19). Posterior median spinnerets distinct, mid width > 10% of midwidth of basal article of posterior laterals: two large brown spots centrally on ventral abdomen . . . . . *O. cooloola*  
Posterior median spinnerets minute, midwidth clearly less than 10% of midwidth of basal segment of posterior laterals; ventral abdomen mottled without large spots . . . . . *O. microcauda*

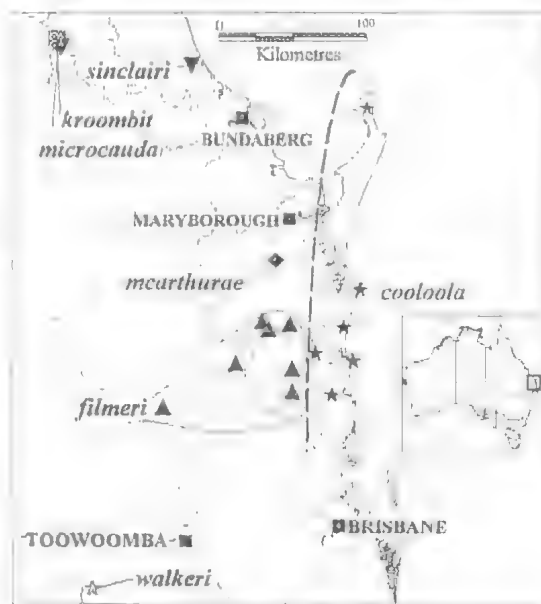


FIG. 75. Records of *Ozicrypta* in SEQ with catchment boundaries.

- 21(3). Basifemoral thorn setae distinct *O. littleorum*  
No basifemoral thorn setae ..... *Synothela pectinata*
- 22(5). Femora-patellae III, IV with thorn spines; few  
or no basifemoral thorns ..... *O. digglesii*  
Femora-patellae III, IV with thorn setae; many  
basifemoral thorns dorsally ..... *O. lawlessi*

# AUSTRALIAN OZICRYPTA

ROBERT J. RAVEN & TRACEY B. CHURCHILL

*Ozicrypta cooloola* Raven & Churchill, sp. nov.  
(Figs 75-77, Table 6)

## MATERIAL EXAMINED

**Types.** Holotype ♂, Freshwater Rd, Cooloola, 122m, 25°58'S 153°10'E, rainforest, pitfall trap, 11 Aug-10 Nov 1974, GSM, QMS8263. Paratypes: ♀ allotype from Lagoon Scrub, Cooloola National Park, 26°12'S 153°03'E, SE. Qld., 24 Apr 1981, ED, QMS8266; ♂, same data as holotype but, QMS16690; 3 ♀, same data as holotype but, 26 Dec 1974-28 Mar 1975, QMS8220, S8232; ♂, Freshwater Rd, Cooloola (high), 183m, rainforest, pitfall trap, 10 Nov-26 Dec 1974, GSM, QMS8261; ♂, Central Station, Fraser Is, 24°48'S 153°13'E, pitfall trap, 16 Apr-20 Oct 1978, GSM, QMS8258; ♂, Searys Scrub, Cooloola, 26°12'S 153°03'E, pitfall trap, Apr 1978, VTD, RR, QMS8250; ♀, L. Poona, Cooloola, 26°12'S 153°03'E, Apr 1978, GBM, QMS8221; 6 ♂, 1 ♀, Cooloola, highdune, pitfall, Oct 1978, KP, QMS8249; ♂, Eurong Rd, Fraser Is, 24°48'S 153°13'E, rainforest, pitfall trap, 20 Oct 1978-3 Feb 1979, GSM, QMS8259; ♀, Cooloola, rainforest, from pompilid wasp, ED, Aug 1970, QMS8230; ♀, property near Pomona, 26°22'S 152°51'E, 4 Jan 1983, W. Lee, QMS8214; ♀, Noosa, inland, 26°25'S 153°07'E, 28 Mar 1983, D. Tringham, QMS8215. All in SEQ.

## OTHER MATERIAL EXAMINED

2j, Freshwater Road, Cooloola (high), rainforest, pitfall, 11 Aug-10 Nov 1974, GSM, QMS8260; 2j, same data but (low), GSM, QMS17830; 2 ♂, 1 ♀ (used for dry weights), Cooloola, High Dune, KP, Oct 1977, QMS8257; 1 juv, with QMS8259; ♀, Nambour, 26°38'S 152°58'E, 10 Apr 1985, R. & K. Robinson, 10 Apr 1985, QMS8200. All in SEQ.

## DIAGNOSIS

Females differ from those of *O. microcauda* in the larger posterior median spinnerets and from *O. sinclairi* in the larger size of the central brown patches ventrally on the abdomen. Both ♂ ♂ ♀ ♀ differ from those of *O. filmeri* in lacking the short thorn-like setae ventrally on coxae I.

PMS present, distinct. Maxillae with 10-28 cuspules, typically c. 15. Abdomen Ventrally with characteristic 4-spot appearance. FEMALES. Basifemoral thorns few, when present. Preening

combs on retroventral III, IV. Metatarsal scopula for 1/2-1/3 on III, IV, respectively. Spermathecae two, each a low mound with slender sigmoid lateral lobe. MALES. Tibia I with short conical distal spur with long curved megaspine; microspur short, blunt, set against long curved megaspine. Palpal bulb pyriform with two broad spiralled keels and 6-9 fine low ridges in distal fifth abruptly ending in short pointed embolus. All claws with two rows of teeth.

## ETYMOLOGY

From an aboriginal name for the type locality, Cooloola, which means a Cypress pine.

## DESCRIPTION

### HOLOTYPE MALE QMS8263

Carapace 6.42 long, 5.50 wide. Abdomen 5.67 long, 3.75 wide. Total length, 14.

**Colour.** Carapace and legs orange brown, chelicerae dark orange brown. Abdomen dorsally pallid with an irregular brown herringbone pattern; ventrally pallid with four brown areas between book-lungs, centrally and near spinnerets.

**Carapace.** Uniform light cover of silver hairs, marginally becoming dense and bushy, with uniformly spaced short black setae; longer setae near posterior striae. Fovea short, procurved. Bases of 6-8 setae between PME, and ALE with 4 long curved setae on clypeal margin. Striae shallow, glabrous, distinct.

**Eyes.** Tubercle low, distinct. Group occupies 0.35 of head-width; front width, back width, length, 32:57:48. Back row straight. MOQ front width, back width, length, 37:38:29. AME:ALE:PME:PLE, 18:14:11:15. Eye interspaces: AME-AME, 0.2; AME-ALE, 0.6; ALE-ALE, 0.7; PME-PLE, 0.1; PME-PME, 1.3; ALE-PLE, 1.5.

**Cheliverae.** Small, rounded with moderately long brown bristles prodorsally mixed with cover of long silver hairs. Rastellum a line of long thick bristles. Furrow promargin with 8 large separated teeth, basomesally with no teeth evident.

**Labium.** 1.08 wide, 0.70 long. Labiosternal suture only two elevated sigilla.

**Maxillae.** 1.91 long in front, 2.37 long behind, 1.08 wide; with 10-15 (species range 10-24) pointed cuspules in inner angle. Heel rounded; anterior lobe distinct.

**Sternum.** 3.25 long, 3.00 wide. Sigilla small, oval, marginal. Marginal setae noticeably thicker than others.

**Legs.** Tibia I with short conical distal spur with long curved megaspine; microspur short, blunt,

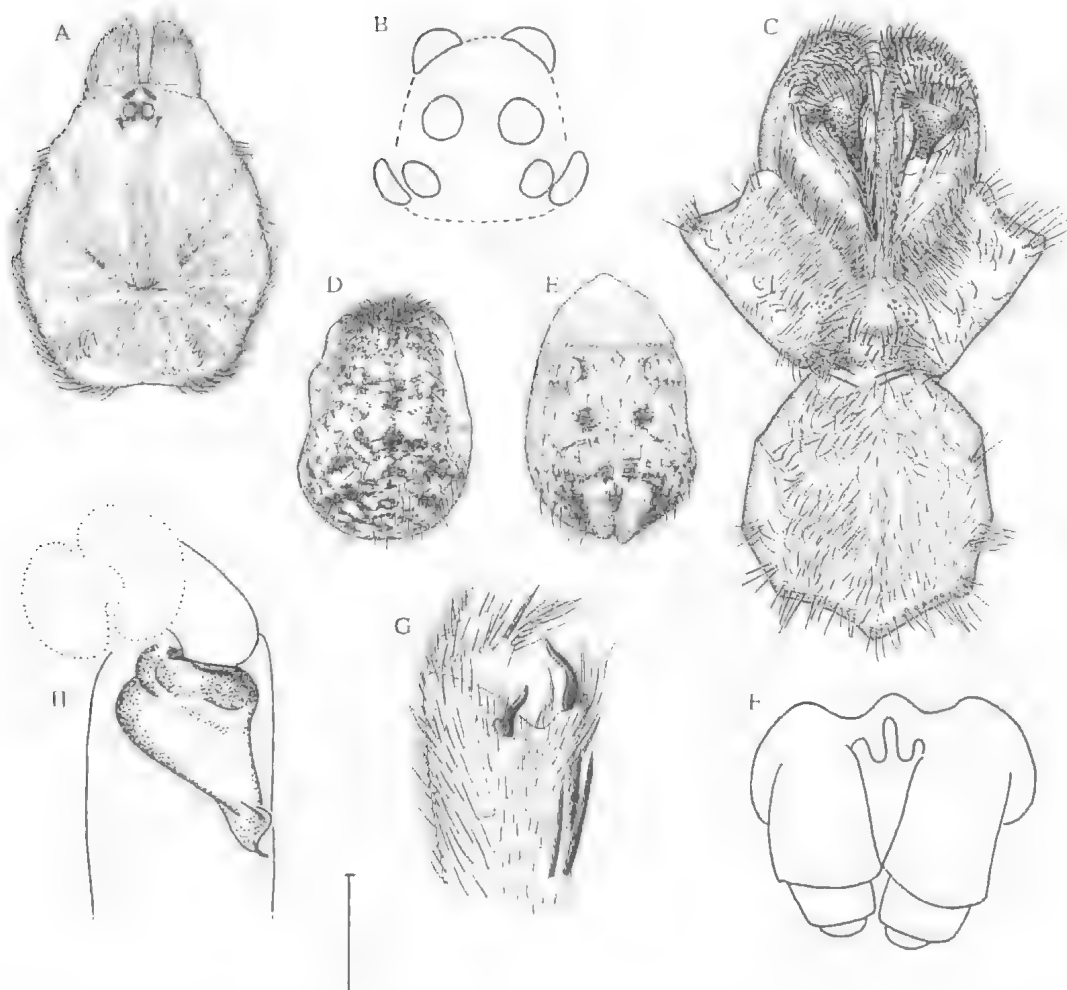


FIG. 76. *Ozicrypta cooloola* sp. nov., holotype ♂ (QMS8263). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, sternum, maxillae, labium & chelicerae, ventral view; D, E, abdomen dorsal (D), ventral (E) views; F, spinnerets, ventral view; G, tibial spur; H, palpal bulb, ventral views. Scale line = 2.8mm (A, D, E); 1.4mm (C); 0.7mm (B, F, G).

set against long curved megaspine. Preening combs: 1 of 3 weak on retroventral III, IV. Scopulate surface of metatarsi and tarsi I, II incrassate, pallid; and of tarsi III, IV pallid.

	I	II	III	IV	Palp
Femur	5.00	4.75	4.50	6.00	2.84
Patella	3.17	3.17	2.33	2.92	1.72
Tibia	4.00	3.50	3.25	5.00	1.80
Metatarsus	3.42	3.17	3.83	6.17	-
Tarsus	1.92	1.92	2.08	2.75	1.16
Total	17.51	16.51	15.99	22.84	7.52

**Scopula.** Metatarsi: I, II, in distal 3/4 thin mixed with few scattered setae; thin in two narrow triangles for distal 1/3 (III)-1/4 (IV). Tarsi: I, II, full,

entire but for fine line of setae; III, thin, entire but for narrow band 2-3 pallid setae wide; IV, similar to III but band of 4-6 brown setae.

**Spines.** I: fe p1, d4, pa 0, ti p3, v6, me p1, v2. II: fe p1, d3, pa 0, ti p2, v6, me p2, v1. III: fe p2, d5, r3, pa p3, r2, ti p2, d9, r2, v6, me p4, r5, v9. IV: fe p1, d4, r2, pa p2, ti p4, d7, r4, v9, me p4, d7, r4, v10. Palp: fe p1, d3, pa 0, ti p2, v4.

**Claws.** 3 long teeth in each of two rows (I); 3 long in outer rows and 1 long on inner faces (IV)

**Trichobothria.** Two rows, each of c. 10 on tibiae for full length; c. 15 in curved row on metatarsi; 4 small clavate and 12-15 filiform on tarsi.

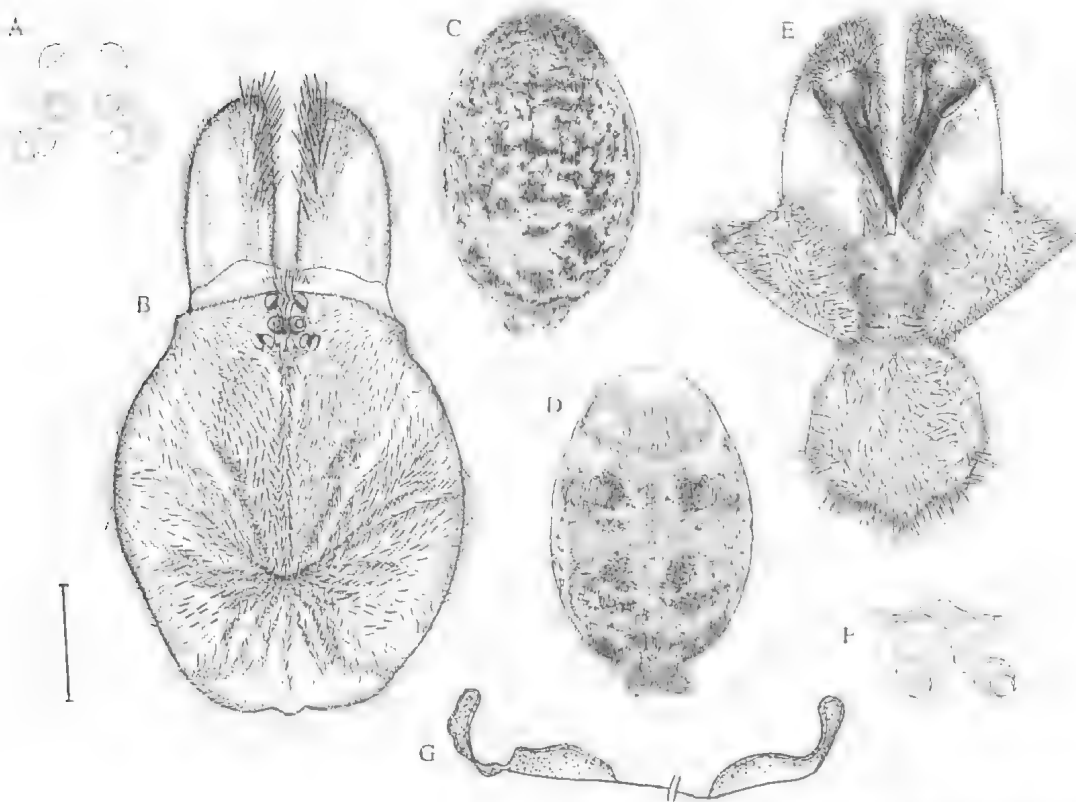


FIG. 77. *Ozicrypta cooloola* sp. nov., allotype ♀ (QMS8266). A, eyes, dorsal view; B, carapace & chelicerae, dorsal view; C, D, abdomen, dorsal (C), ventral view (D); E, sternum, maxillae, labium & chelicerae, ventral view; F, spinnerets, ventral view; G, spermathecae. Scale line = 5mm (C, D); 2.5mm (B, E, F); 1mm (A); 0.5mm (G).

**Palp.** Bulb pyriform with two broad spiralled keels and 6-9 fine low ridges in distal 1/5 abruptly ending in short pointed embolus. Retrolateral face of cymbium straight to convex.

**Spinnerets.** PMS 0.19 long, 0.08 wide, 0.08 apart, c.0.13 of basal PLS in diameter. PLS length of basal, middle, apical, and total articles 1.04, 0.29, 0.17, 1.50, respectively.

#### ALLOTYPE FEMALE QMS8266

Carapace 9.42 long, 7.67 wide. Abdomen 12.67 long, 8.83 wide. Total length, 26.

**Colour.** Carapace and legs orange brown, chelicerae red brown. Abdomen dorsally mottled brown and white (dominant) forming no distinct pattern; ventrally pallid with large irregularly shaped brown areas beside posterior book-lungs and centrally forming 4-spot appearance and band near spinnerets.

**Carapace.** Uniform cover of fine black hairs. Bristles: many black beside posterior striae; c.10 between ALE; c.6 between PME; fine black

along posterior margin. Anteromedially c.10 long posteriorly directed in posterior striae. Fovea short but clearly procurved.

**Eyes.** Tubercle low; group occupies 0.31 of head-width; front width, back width, length, 47:76:61. Back row straight. MOQ front width, back width, length, 41:50:33. AME:ALE:PME:PLE, 18:18:14:20. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.7; ALE-ALE, 0.9; PME-PLE, 0.1; PME-PME, 1.8; ALE-PLE, 1.8.

**Chelicerae.** Stout, porrect; narrow band of long black bristles mixed with many short bristles in wide band. Rastellum only of fine curved bristles. Furrow promargin with 8 large separated teeth, basomesally with 15 small teeth and 10-15 granules.

**Labium.** 1.54 wide, 0.75 long. Labiosternal suture a wide shallow groove including 2 joined sigilla.

**Maxillae.** 2.87 long in front, 4.12 long behind, 1.66 wide; with 17-18 (species range 10-28)

cuspsules in inner angle. Heel distinctly produced; anterior lobe small, distinct.

*Sternum*. 4.33 long, 4.08 wide. Sigilla all small, oval, marginal.

*Legs*. I, IV of similar girth. 2-3 basifemoral thorns on I, II, IV. Thorn spines absent. Preening combs: 1 of 3 on retroventral III, IV.

	I	II	III	IV	Palp
Femur	4.92	4.67	4.58	6.00	3.83
Patella	4.17	3.75	3.17	3.75	2.83
Tibia	3.83	3.33	3.00	4.50	2.33
Metatarsus	2.83	2.92	3.92	5.92	-
Tarsus	1.75	1.83	1.75	1.75	2.17
Total	17.50	16.50	16.42	21.92	11.16

*Scopula*. Metatarsi: I, II, entire, full, III, in distal 1/2, parted by spines; IV, in distal 1/3, parted into 2 thin triangles. Tarsi: I, II, full, entire, save for few setae, most evident on II; III, full, parted by band 4-6 setae wide; IV, full, parted by band 6-8 setae wide.

*Spines*. I: fe p1, pa 0, ti v2w, me 0, v1. II: fe p1, pa 0, ti p2, v2, me v2. III: fe p1, d1, r3, pa p3, r1, ti p2, r2, v7, me p4, r3, v10. IV: fe d1, r2, pa r1, ti r2, v10, me p5, r6, v12. Palp: fe p1, pa 0, ti p1, v7.

*Claws*. All of I-IV of similar size, with 2-3 small teeth; palpal claw bare, slightly smaller than tufts; tufts iridescent blue-green.

*Trichobothria*. Two rows, each of c. 11 for full length of tibiae; c. 17 in curved row on metatarsi; c. 4-6 small clavate and c. 15 long filiform on tarsi.

*Spermathecae*. Two, each a low mound with slender sigmoid lateral lobe.

*Spinnerets*. PMS 0.27 long, 0.13 wide, 0.17 apart, c. 0.14 of basal PLS in diameter. PLS length of basal, middle, apical, and total articles 1.39, 0.72, 0.27, 2.38, respectively.

#### DISTRIBUTION & HABITAT

Rainforest on the coastal sandy soils of Coolool National Park and Frazer Island, near Gympie, and south to Noosa, Nambour and Pomona, SEQ.

#### REMARKS

Adult ♂♂ not included as paratypes had been used for dry weight determinations and are bleached and very fragile and hence unsuitable as types. The ♀ from Nambour (QMS8200) has similar spermathecae to *O. cooloola* topotypic material but the abdomen is collapsed and wrinkled and its pattern cannot be confirmed and the posterior median spinnerets are larger.

Variation in maxillary cuspsules may seem too great to be useful taxonomically. However, by averaging cuspsule counts on both maxillae of

each specimen the difference is much less (mode=15).

#### *Ozicrypta australoborealis* Raven & Churchill,

sp. nov.

(Figs 71, 78, Table 7)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, King R, NT, 12°03'S 133°25'E, W. McLennan, donated 17 Oct 1917, H.L. White, MV K2202; ♀ paratype, same data, MVK2203.

#### DIAGNOSIS

Differs from *O. noonamah* in that the posterior lateral eyes are smaller even than the posterior median eyes and the palpal claw is as high or higher than then tufts.

PMS absent. Rastellum low aspinose mound. Eye group long, wider behind than in front. FEMALES. 4-7 cuspsules on maxillae. All paired claws dentate; claws of I and IV about same size. Basifemoral thorns on I, IV. Femora-patellae III, IV prolaterally only with strong conical setae. Scopula for 1/2-1/3 of metatarsi III, IV, respectively. Preening combs present. Spermathecae consist of a single broad bilobate mound with slender pyriform apically expanded lobes, arising from ventral face. MALES. Unknown.

#### ETYMOLOGY

For the northerly locality of the species.

#### DESCRIPTION

HOLOTYPE FEMALE MV K2202

Carapace 5.88 long, 5.00 wide. Abdomen 8.75 long, 6.06 wide. Total length, 16.

*Colour* (faded). Carapace, chelicerae, and legs yellow brown, legs not annulated. Abdomen dorsally brown with many white spots; ventrally pallid save for two longitudinal brown bands medially.

*Carapace*. Pilosity: uniform pile of fine brown hairs; striae distinct, narrow. Bristles: 3 long and 2-4 short erect black beside posterior striae; 15 posteriorly directed anteromedially and few shorter in band beside caput; scars of 4 large and few finer between PME, and 4 long thick and 3-6 finer between ALE; short hairs and brown bristles on lateral margins. Fovea short, procurved with recurved corners.

*Eyes*. Tubercle distinct, posteriorly slope strong, with distinct medial ridge. Group occupies 0.25 of head-width; front width, back width, length, 45:67:60, respectively. Back row straight. MOQ front width, back width, length, 49:51:36, respectively. AME:ALE:PME:PLE,



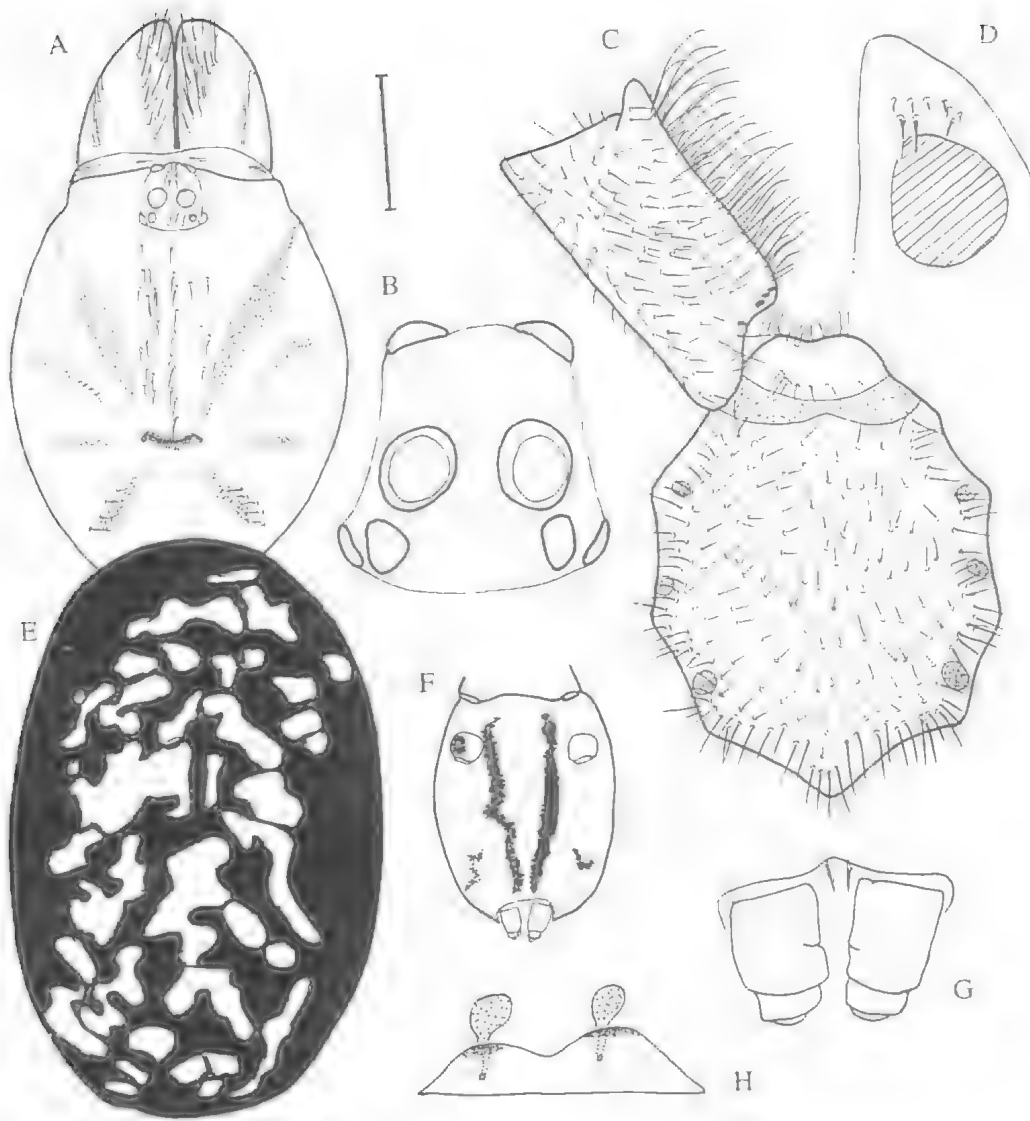


FIG. 78. *Ozicrypta australoborealis* sp. nov., holotype ♀ (MV K2202) A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, sternum, maxillae & labium, ventral view; D, rastellum; E, F, abdomen, dorsal (E), ventral view (F); G, spinnerets, ventral view; H, spermathecae. Scale line = 2mm (A, E); 0.5mm (B, H); 1mm (C, D, G); 4mm (F).

22:18:14:13. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.8; ALE-ALE, 0.7; PME-PLE, 0.1; PME-PME, 1.5; ALE-PLE, 1.7.

**Chelicerae.** Narrow band of few long and many short bristles prodorsally, laterally few short bristles. Rastellum a low distinct mound with many short straight bristles over anterior face and down to fang edge. Furrow promargin with 9

large close teeth, basomesally with 10-15 small teeth.

**Labium.** 1.09 wide, 0.56 long. Labiosternal suture two separate sigilla.

**Maxillae.** 1.88 long in front, 2.50 long behind, 1.16 wide; with 4-7 blunt cuspules on horizontal, hardly sloping inner angle. Heel small but produced; anterior lobe small. Lyra absent.

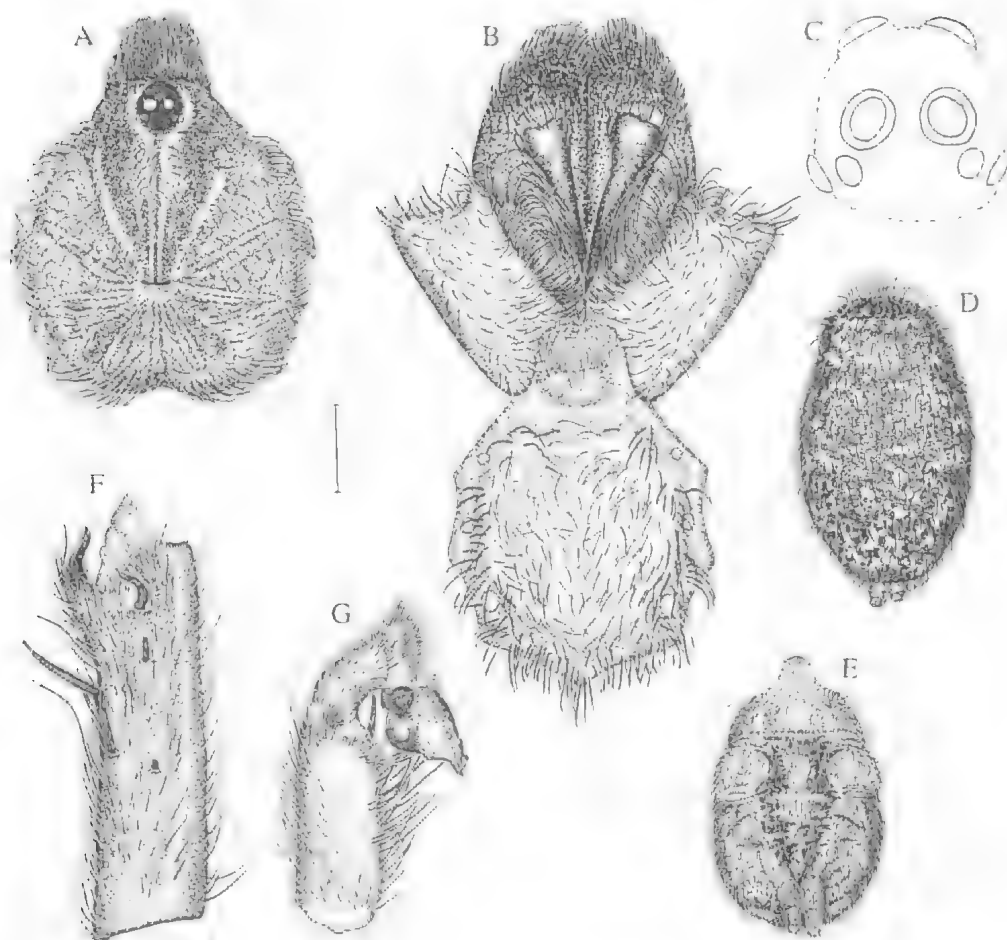


FIG. 79. *Ozicrypta clarki* sp. nov., holotype ♂ (QMS11388). A, carapace & chelicerae, dorsal view; B, sternum, maxillae & labium, ventral view; C, eye group, dorsal view; D, E, abdomen, dorsal (D), ventral view (E). F, tibial spur, prolateral view; G, cymbium & palpal bulb, prolateral view. Scale line = 2mm (A, D, E); 1mm (B, F, G); 0.5mm (C).

**Sternum.** 3.19 long, 2.69 wide. Sigilla all small, oval, marginal, set on strongly sloping edge.

	I	II	III	IV	Palp
Femur	4.13	3.44	3.13	4.19	2.75
Patella	2.81	2.50	1.75	2.38	1.75
Tibia	2.94	2.38	2.06	3.50	1.75
Metatarsus	2.19	2.06	2.63	4.56	—
Tarsus	1.25	1.19	1.38	1.56	1.56
Total	13.32	11.57	10.95	16.19	7.81

**Legs.** Basifemoral thorns on I (1-3), IV (4). Thorn spines absent but comb of strong setae prolaterally on patellae-tibiae III, IV junctions. Preening combs: 1 of 2 setae on retroventral IV.

**Scopula.** Metatarsi: I, II, full, broad, dense, entire; III, in distal 1/2; IV, in distal 1/3, divided. Tarsi: I, II, full, broad, dense, entire; III, IV, divided by wide setal band 8-12 (III), 12-20 (wide).

**Spines.** I: fe p1, rest 0. II: fe p1, rest 0. III: fe p1, d1, r2, pa p1, ti p2, r2, v6, me p4, r4, v8. IV: fe d2, r1, pa p1, ti p2, r2, v7, me p4, r4, v9. Palp: fe p1, pa 0, ti v3.

**Claws.** All leg claws similar in size, as high as tufts, with 2 small teeth on medial keel; palpal claw slightly smaller, bare.

*Trichobothria*. Two rows, each of c.8 for length of tibiae; c.15 on metatarsi in curved row; c.17 filiform on tarsi, none clavate.

*Spermathecae*. A single broad bilobate mound with slender pyriform apically expanded lobes, arising from ventral face.

*Spinnerets*. PMS represented only by two tufts of hair. PLS length of basal, middle, apical, and total articles 0.86, 0.19, 0.05, 1.10, long respectively.

#### DISTRIBUTION

King River, northeastern NT.

***Ozicrypta clarki* Raven & Churchill, sp. nov.**  
(Figs 71, 79, Table 7)

#### MATERIAL EXAMINED

TYPE. Holotype ♂, Terry Beach, Prince of Wales Is, 10°41'S, 142°11'E, Torres Strait, Q, 30 Jun 1976, E. Cameron, QMS11388.

#### DIAGNOSIS

Differs from *O. etna* in the larger size and the two keels on the palpal bulb whereas in *O. etna* only fine ridges are present; ALE not noticeably large.

PMS absent. 7 cuspules on maxillae. Preening combs on metatarsi III, IV. Rastellum is distinct mound with only long curved bristles. MALES. Palpal bulb conical; embolus short with 2 keels; retrolateral face of cymbium concave; tibia I with strong conical spur; megaspine moderately long, angular; microspur a minute lobe beside long sinuous megaspine; claws with 3 short blunt teeth in medial keel. FEMALES. Unknown.

#### ETYMOLOGY

For Dr Gregory J. Clark, Director of Science and Technology, IBM Australia Limited, in recognition of the major advances made by OS2/2.1 which greatly accelerated the production of this monograph.

#### DESCRIPTION

HOLOTYPE MALE QMS11388

Carapace 7.67 long, 6.20 wide. Abdomen 6.87 long, 4.13 wide. Total length, 17.

*Colour*. Carapace and chelicerae deep red brown; legs dark orange brown, not annulated. Abdomen dorsally with similar parts of brown and white mottling; ventrally pallid with two parallel brown bands medially.

*Carapace*. Light brush of silver hair on margin and centrally. Bristles: long, thick, black on margins; short, almost thorn-like elsewhere; line of 13 anteromedially; 6 between PME; group of 4

long on clypeal margin between ALE; c.4 long in anterior ocular quadrangle; no strong setae on anterior margin. Striae indistinct, narrow, shallow, setose. Pleural extensions around posterior margin. Posterior striae with 3-5 thick setae. Fovea short, straight, with procurved edges.

*Eyes*. Group occupies 0.35 of head-width; front width, back width, length, 40:58:52. Back row recurved. MOQ front width, back width, length, 38:42:27. AME:ALE:PME:PLE, 17:16:9:12. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.9; ALE-ALE, 0.7; PME-PLE, 0.1; PME-PME, 1.7; ALE-PLE, 1.9.

*Chelicerae*. Uniform cover of golden brown hairs; prodorsally a band of short black bristles. Distinct mound above fang junction, mound covered only with long curved bristles; probably not functional rastellum. Promargin with 7 spaced teeth, basomesally with 8 fine black granules extend to half length of furrow. Intercheliceral tumescence absent.

*Labium*. 1.16 wide, 0.52 long. Long stiff setae on anterior margin. Labiosternal suture is two large contiguous sigilla.

*Maxillae*. 2.08 long in front, 2.60 long behind, 1.12 wide; with 7 cuspules on inner corner; with short, moderately thick, curved setae. Heel rounded; anterior lobe distinct, angular.

*Sternum*. 3.52 long, 3.08 wide. Glabrous but for posterior margin near coxae III. Posterior margin and margin inside inner edges of sigilla with distinct line of thick black bristles, elsewhere bristles short black. Anterior and lateral edges without hair or setae. Sigilla all on marginal slope; posterior pair oval, 0.32 long; middle and anterior pairs, round, 0.16, 0.12 long, respectively.

*Legs*. Uniform cover of short thorn-like setae. Tibia I with strong conical spur; megaspine moderately long, angular at base; prolateral microspur reduced to minute lobe set against long medially curved megaspine. Metatarsi I, II distally incrassate and pallid for 2/3 their length and forming slope to base; tarsi I, II incrassate. Preening combs: 3-4 weak setae in group retroventrally on III, IV.

	I	II	III	IV	Palp
Femur	5.68	4.56	4.32	5.92	3.12
Patella	3.60	3.36	2.64	2.96	2.08
Tibia	3.92	3.36	3.12	4.88	2.16
Metatarsus	3.04	3.04	3.44	5.68	-
Tarsus	1.52	1.52	1.60	1.92	1.28
Total	17.76	15.84	15.12	21.36	8.64

*Scopula*. Dense but not obscuring cuticle. Scopulate area of tarsi I, II pallid, tarsi III pallid ventromedially, tarsi IV distoventrally so.

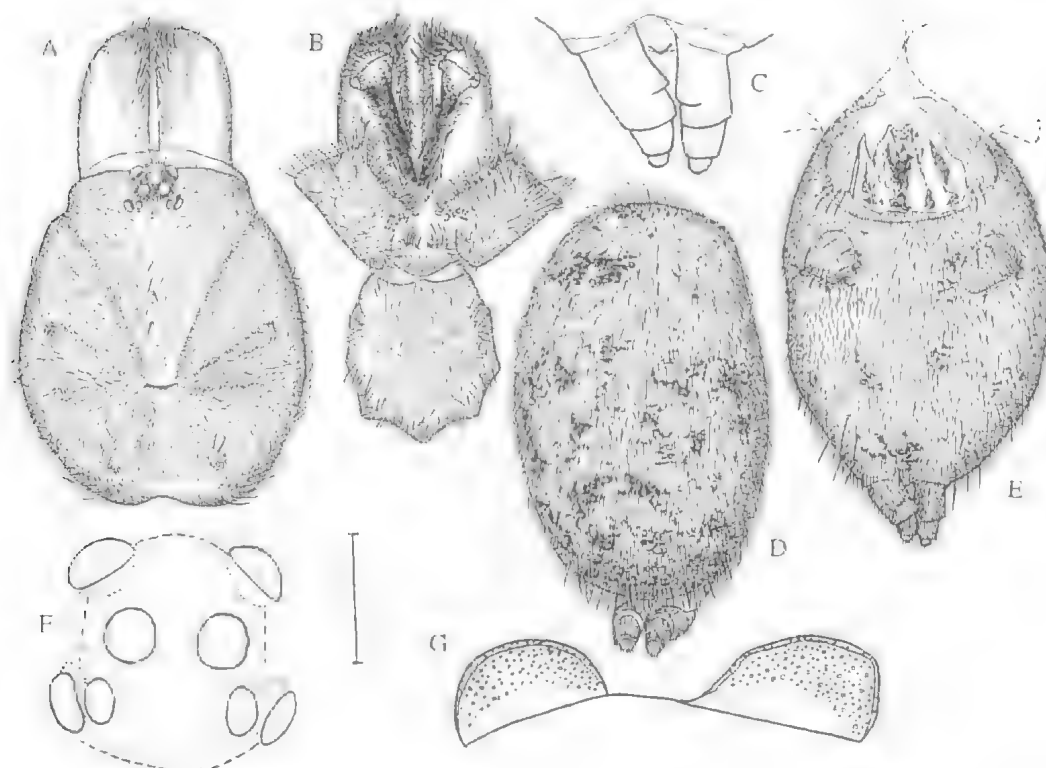


FIG. 80. *Ozicrypta clyneae* sp. nov., holotype ♀ (QMS8218). A, carapace & chelicerae, dorsal view; B, sternum, maxillae & labium, ventral view; C, spinnerets, ventral view; D, E, abdomen, dorsal (D), ventral view (E); F, eye group, dorsal view; G, spermathecae. Scale line = 2.5mm (A, B, D, E); 1.3mm (C); 0.7mm (F); 0.25mm (G)

**Metatarsi:** I, II, short, dense, entire, in pallid, distal half; III, in 3 narrow distal bands; IV, 3 scattered groups. **Tarsi:** I, II, short, dense, entire; III, proximally thin, full, parted by setal band 5-6 rows wide; IV, like III but more setal rows.

**Spines.** I: fe p2, d4, pa 0, ti p2, v6 + 2 megaspines, me p1, v1. II: fe p2, d3, pa 0, ti p2, v8, me p1, v1. III: fe p3, d4, r3, pa p1, r1, ti p2, d3, r2, v8, me p6, r7, v8. IV: fe p3, d3, r2, pa p1, r1, v1, ti p2, d2, r4, v8, me p4, d4, r4, v8. **Palp:** fe p1, d3, pa 0, ti p1, v2.

**Claws.** 3 short blunt teeth on medial keel on I, IV. Tufts dense, high, not enclosing claws.

**Trichobothria.** Two rows, each of c.10, full length of tibiae; c.17 on metatarsi in proximally irregular, curved row; c.16 filiform (only) on tarsi.

**Palp.** Bulb conical; embolus short with two keels arising from high on bulb to apex; tibia ventrally grooved for distal 3/4. Retrolateral face of cymbium concave.

**Spinnerets,** PMS absent. PLS length of basal, middle, apical, and total articles 0.62, 0.30, 0.24, 1.16, respectively.

#### DISTRIBUTION & HABITAT

Terry Beach, Prince of Wales I, Torres Strait; the ♂ was found under rocks in 'savannah woodland'.

*Ozicrypta clyneae* Raven & Churchill, sp. nov.  
(Figs 73, 80. Table 7)

#### MATERIAL EXAMINED

**Types.** Holotype ♀, Finch Hatton, 21°09'S 148°38'E, MEQ, rainforest at 350m, 12 Apr 1975, JC, QMS8218; paratype ♀, same data QMS19108.

#### DIAGNOSIS

Differs from *O. eungella* in lacking a rastellum and the spermathecae lack lateral lobes.

PMS absent. Maxillae with 23-28 cuspules. Rastellum absent. **FEMALES.** Basifemoral

thorns weak to absent. Preening combs on III, IV. Comb of strong setae prolaterally on femora III, IV. Abdomen dorsally pallid with some mottling, ventrally pallid. Spermathecae two, each a broad low mound without lateral lobes.

#### ETYMOLOGY

For Ms Densley Clyne, well-known author, arachnologist, and film-maker in recognition for her many contributions to natural history documentation.

#### DESCRIPTION

##### HOLOTYPE FEMALE QMS8218

Carapace 5.47 long, 4.53 wide. Abdomen 6.33 long, 4.60 wide. Total length, 15.

**Colour.** Carapace, chelicerae, and legs yellow brown; abdomen dorsally pallid with two transverse brown areas anteriorly, a central inverted T, and two irregular paired brown areas posteriorly; ventrally pallid, save for very small brown mottling between posterior book-lungs, centrally and just in front of spinnerets.

**Carapace.** Lateral margins and elsewhere with uniform cover of silver hairs and short brown bristles; c.4 black bristles in posterior striae, 9 thick and 6 fine anteromedially, many short thin lateral of those, 6 thick, 6-8 fine, and many hairs between PME; similar numbers between AME. Fovea procurved, striae narrow, indistinct, hirsute.

**Eyes.** Tubercle low, distinct. Group occupies 0.33 of head-width; front width, back width, length, 47:58:46. Back row straight. MOQ front width, back width, length, 31:41:23. AME:ALE:PME:PLE, 9:15:8:14. Eye interspaces: AME-AME, 1.2; AME-ALE, 1.4; ALE-ALE, 2.6; PME-PLE, 0.2; PME-PME, 2.9; ALE-PLE, 2.7.

**Chelicerae.** Slender, porrect; prodorsally with several long black and many shorter bristles; laterally with uniform cover of fine black bristles and group form band. Rastellum only long curved setae distally, mound absent. Furrow promargin with 1 small and 8 large irregular spaced teeth, basomesally with 11 small teeth.

**Labium.** 0.95 wide, 0.51 long. Labiosternal suture includes two sigilla, medially joined.

**Maxillae.** 1.52 long in front, 1.97 long behind, 0.89 wide; with c.23-28 cuspules in inner area. Heel produced, rounded; anterior lobe short, distinct.

**Sternum.** 3.00 long, 2.40 wide. Sigilla small, indistinct, subcircular, marginal.

**Legs.** Setae basally on femora I, II, IV small, thin, and weak but short, and probably homologues of basifemoral thorns. Thorn spines absent, but distinct line of erect setae present on prolateral femora III, IV. Preening combs: tight group of 2-3 (III), or 4 (IV) strong setae.

	I	II	III	IV	Palp
Femur	4.96	4.48	4.00	5.68	3.20
Patella	2.96	2.96	2.24	2.80	2.16
Tibia	3.52	3.12	2.48	4.48	2.16
Metatarsus	2.80	2.48	3.36	5.60	-
Tarsus	1.44	2.00	1.92	2.32	1.92
Total	15.68	15.04	14.00	20.88	9.44

**Scopula.** Metatarsi: I, II, full, dense, weakly (I) or distinctly strongly divided by setal band 2-3 wide; III, distal 1/3, thin, mixed with bristles; IV, two thin triangles of hair in distal 1/5, mixed with bristles. Tarsi: I, II, full, dense, divided narrowly by subtle setal band 1-2 wide; III, thin, setal band 4-6 wide; IV, very thin, setal band 6-8 wide.

**Spines.** I: fe p1, d4, pa 0, ti p2w, v2, mc v2. II: fe p2, d4, pa 0, ti p3, v2, mc v2. III: fe p2, d4, r3, pa p3, r1, ti p2, r2, v10, mc p4, r4, v9. IV: fe d4, r1, pa 0, ti r3, v11, mc p3, r3, v13. Palp: fe p1 d5, pa 0, ti p2, v7.

**Claws.** 3 (I) or 2 (IV) teeth; palpal claw bare.

**Trichobothria.** Two rows, each of c.11 on tibiae; c.8 in slightly curved row on metatarsi; no clavate, c.12 filiform on tarsi.

**Spermathecae.** Two, each a broad low mound without lateral lobes.

**Spinnerets.** PMS absent. PLS length of basal, middle, apical, and total articles 0.56, 0.38, 0.11, 1.05, respectively.

#### DISTRIBUTION & HABITAT

Finch Hatton, in the Pioneer River valley, via Mackay, MEQ, an area of vine thicket intergrading with rainforest on the upper slopes.

#### SYMPATRIC MYGALOMORPHS

*Trittame forsteri* Raven; *Namlrea runggella* Raven (Dipluridae).

**Ozicrypta combeni** Raven & Churchill, sp. nov.  
(Figs 71, 72, 81, 82. Table 7)

#### MATERIAL EXAMINED

**TYPE.** Holotype ♂, Forty Mile Scrub, SW Mt Garnet, 18°05'S 144°51'E, NEQ, 10-14 Apr 1978, RR, VTD, QMS11244.

**OTHER MATERIAL EXAMINED:** Juvenile in burrow with wafer lid with dirty leaf cover.

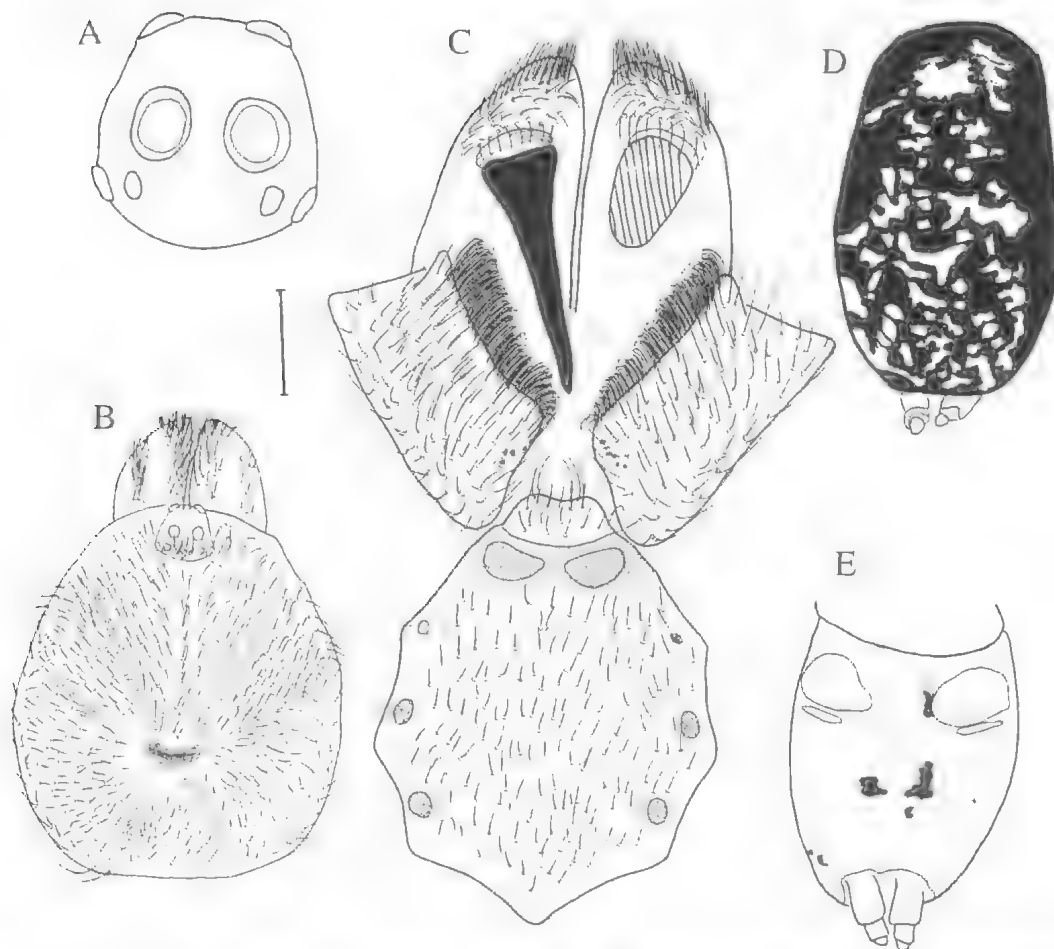


FIG. 81. *Ozicrypta combeni* sp. nov., holotype ♂ (QMS11244). A, eye group, dorsal view; B, carapace & chelicerae, dorsal view; C, sternum, maxillae & labium, ventral view; D, E, abdomen, dorsal (D), ventral view (E). Scale line = 2mm (B, D, E); 1mm (C); 0.5mm (A).

#### DIAGNOSIS

Differs from *O. hollinsae* in the larger keel on the palpal bulb.

PMS absent. 4-7 cuspules on maxillae. Rastellum weak. MALES. Palpal bulb pyriform with keels and ridges; embolus short. Retrolateral face of cymbium concave. Tibia I with conical spur and slightly sigmoid megaspine; microspur absent. Preening combs absent. Claws with 8-10 teeth in outer rows in broadly flared scoop on I, 7-8 long teeth in 2 juxtaposed rows in broadly flared scoop on IV. FEMALES. Unknown.

#### ETYMOLOGY

For Mr Pat Comben, Minister for the Environment and Heritage 1989-1992, in recognition of

his efforts to ensure national parks of Queensland, like the type locality, Forty Mile Scrub National Park, are representative of the biodiversity of the state.

#### DESCRIPTION

##### HOLOTYPE MALE QMS11244

Carapace 6.96 long, 6.08 wide. Abdomen 7.04 long, 4.16 wide. Total length, 16.

**Colour.** Carapace, chelicerae, and legs orange brown; abdomen dorsally brown with white mottling most extensive posteriorly; ventrally entirely pallid save for brown marks, near book-lungs and spinnerets.

**Carapace.** Uniform cover of short black bristles; silvery hairs bushy on lateral margins





FIG. 82. *Ozicrypta combeni* sp. nov., holotype ♂ (QMS11244). A, tibia & metatarsus I, prolateral view; B, tibial spur; C, palpal bulb, ventral view. Scale line = 1mm (A); 0.5mm (B, C).

and almost obscuring cuticle; long setae less dense around fovea. Bristles: 2 paired foveal directed anteriorly; 6-8 between AME; 5 long and several short between ALE; none on clypeal edge; line of 10-15 posteriorly directed anteromedially; striae glabrous; none on clypeal edge; 6-8 enlarged setae near posterior striae. Fovea short, straight.

**Eyes.** Group occupies 0.26 of head-width; front width, back width, length, 36:54:45. Back row slightly procurved. MOQ front width, back width, length, 38:38:27, AME:ALE:PME:PLE, 17:12:7:9. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.8; ALE-ALE, 0.9; PME-PLE, 0.2; PME-PME, 1.6; ALE-PLE, 1.9.

**Chelicerae.** Small; long black bristles within bush of silver hairs. Rastellum with few strong curved bristles on movable bases. Fang smooth. Furrow promargin with 8 large spaced teeth; no teeth basomesally.

**Labium.** 1.00 wide, 0.48 long; 8 long setae in transverse line behind midpoint. Labiosternal suture two broad oval areas.

**Maxillae.** 2.12 long in front, 2.68 long behind, 1.16 wide; with 4-7 blunt cuspules, not mounded. Heel slightly produced; anterior lobe short.

**Sternum.** 3.52 long, 3.12 wide. Sigilla all small, oval, marginal. With uniform long setae thickest on margins.

**Legs.** Tibia I with conical spur (foreshortened in Figs. 81A, B) with long slightly sigmoid megaspine; prolateral megaspine strongly sigmoid, without dorsal microspur; all ventral tarsi pallid. Scopulate surfaces of metatarsi and tarsi I, II incrassate.

	I	II	III	IV	Palp
Femur	6.83	6.58	5.83	7.42	3.42
Patella	4.25	4.08	2.83	3.50	2.25
Tibia	4.42	4.50	3.75	6.08	2.67
Metatarsus	4.58	4.58	5.33	7.67	.
Tarsus	2.33	2.50	2.25	2.50	1.42
Total	22.41	22.24	19.99	27.17	9.76

**Scopula.** Metatarsi: I, II, distal 3/4, thin, not obscuring cuticle, entire; III, distal 1/3, divided by two bands of setae; IV, two small triangles in 1/10. Tarsi: I, II, full, not obscuring cuticle, entire; III, divided by 4-6 rows of setae; IV, three equal bands. Thorn spines and preening combs absent.

**Spines.** Metatarsi I, II with very long spine prolaterally. I: fc p4, d4, r3, pa r3, ti p3 + megaspine, v13 + megaspine, me p1, v3. II: fc p3, d4, r3, pa v1, ti p2, v11, me p2, v3. III: fc p4, d3, r4, pa p1, v1, ti p2, d4, r2, v11, me p4, d7, r4, v11. IV: fc p3, d2, r3, pa p1, v1, ti p2, d7, r3, v10, me p6, d8, r4, v15. Palp: fc p1, d3, pa 0, ti p2, v4 very long.

**Claws.** Tuft do not enclose claws. On I, 8-10 long teeth (10 in outer) in each of 2 rows forming broadly flared scoop; IV, 7-8 long teeth in juxtaposed rows.

**Trichobothria.** Two rows, each of 11-13 on tibiae; curved row of c. 12 on metatarsi; two bands all filiform of 6-8 on tarsi.

**Palp.** Bulb pyriform with 1 small short and two larger keels terminating at tip, many finer ridges proximally; embolus short, 3-keeled structure; cymbium not spinose, retrolateral face of cymbium concave; a very long spine basally on ventral tibia and prolaterally.

**Spinnerets.** PMS absent. PLS length of basal, middle, apical, and total articles 0.96, 0.16, 0.08, 1.20, respectively.

#### DISTRIBUTION & HABITAT

Forty Mile Scrub National Park, southwest of Mt Garnet, NEQ, a semi-evergreen vine thicket with average canopy height of *Brachychiton* about 3-5 m.

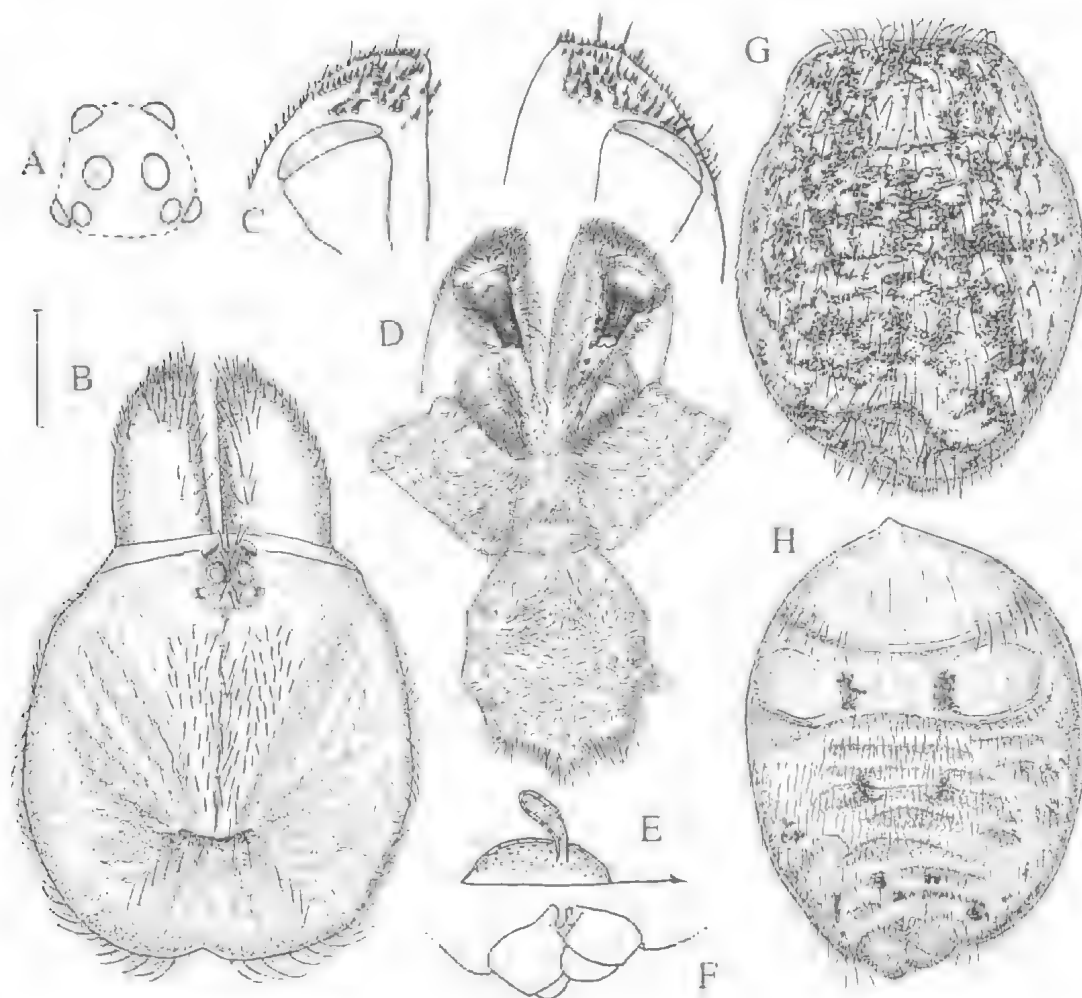


FIG. 83. *Ozicrypta digglesi* sp. nov., holotype ♀ (QMS7167). A, eyes, dorsal view; B, carapace & chelicerae, dorsal view; C, apical chelicerae with rastellum, ventral view; D, sternum, maxillae, labium & chelicerae, ventral view; E, spermathecae; F, spinnerets, ventral view; G, H, abdomen, dorsal (G), ventral view (H). Scale line = 2mm (B, D, G, H); 1mm (A, C, F); 0.5mm (E).

#### MYGALOMORPHS SYMPATRIC

*Aname pallida* Koch (Nemesiidae);  
*Zophorame covacevichae* sp. nov., *Idiommatia* sp.  
 (Barychelidae).

***Ozicrypta digglesi* Raven & Churchill, sp. nov.**  
 (Figs 71, 83, Table 7)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Wandovale Station, NW of Charters Towers, 19°40'S 144°54'E, NEQ, August 1978, M. Wade, QMS7167; 1 ♀, Mt Hoya, Zig Zag Rd, west of Emerald, CQ, 23°23'S 147°25'E, in sapphire mine, Dec 1982, L. Gallagher, AM KS6438.

#### DIAGNOSIS

Females differ from ♀♀ *O. littleorum* in the low rastellar mound, and from ♀♀ *O. etna* in having strong thorn spines near the joint of femur-patella III, IV.

PMS absent. Maxillae with 5-8 cuspules. Rastellum of short spines on low distinct mound. Distal edges of prolateral and dorsal femora III, IV and adjacent patellar corners with thorn spines. FEMALES. Basifemoral thorns few. Spermathecae two, each a low wide mound with long slender lobe arising from ventral face of mound. MALES. Unknown.

## ETYMOLOGY

For Silvester Diggles (1817-1880), founding member of the Brisbane Philharmonic Society, Brisbane Choral Society and Queensland Philosophical Society, and curator of the latter society's museum, which became the basis of the Queensland Museum (Marks, 1963).

## DESCRIPTION

## HOLOTYPE FEMALE QMS7167

Carapace 7.44 long, 6.80 wide. Abdomen 6.00 long, 7.76 wide. Total length, 19.

**Colour.** Carapace and legs orange brown, chelicerae brown. Abdomen dorsally brown with dominant white mottling; ventrally pallid with brown markings beside posterior book-lungs and centrally.

**Carapace.** Pilosity: light pile of short, straight, silver hairs giving silver sheen, mixed with fine black bristles; hairs longer and denser on posterior corners with some long slender black bristles; 3-5 thick black bristles in posterior striae; 10 thick and several thinner anteromedially, lateral of which a band of many fine black; several fine between PME; 3 long and several smaller between AME and 5 long on clypeal edge. Fovea deep, procurved. Striae narrow indistinct, all hirsute except anterior pair.

**Eyes.** Group occupies 0.27 of head-width; front width, back width, length, 47:68:57. Back row recurved; PLE small, similar to PME. MOQ front width, back width, length, 39:50:29. AME:ALE:PME:PLE, 13:18:8:14. Eye interspaces: AME-AME, 0.9, AME-ALE, 1.3, ALE-ALE, 1.2, PME-PLE, 0, PME-PME, 2.5; ALE-PLE, 2.5.

**Chelicerae.** Stout, rounded; broad band of short curved black bristles prodorsally and narrow setose band laterally. Rastellum of many short spines on distinctly produced mound, spines most many just over edge of fang joint. Furrow promargin with 3 very large and 5 smaller teeth, basomesally with two irregular, almost parallel lines, one shorter, totally of c.18 small teeth.

**Labium.** 1.12 wide, 0.56 long. Labiosternal suture a broad groove with 2 mounded sigilla joined medially.

**Maxillae.** 2.24 long in front, 3.20 long behind, 1.44 wide; with 5-8 cuspules in inner angle. Heel slightly produced; anterior lobe distinct.

**Sternum.** 3.92 long, 3.28 wide. Sigilla all small, oval, marginal, indistinct.

**Legs.** Lightly setose. Femora III incrassate; thicker than all other femora; otherwise legs I, II about as thick as III, IV. Distal edges of prolateral

and dorsal femora III, IV and adjacent patellar corner with thorn spines; 15-20 on femora III, 30-40 longer spines on patellae III; 30-40 on femora IV, less on patellae IV. Basal femora I-IV with one very long spine dorsally. One basifemoral thorn seta on I, IV. Preening combs: 1 of 3 retroventrally on IV.

	I	II	III	IV	Palp
Femur	5.68	5.04	4.72	5.76	3.92
Patella	3.76	3.28	3.12	2.96	2.48
Tibia	3.84	3.28	2.80	4.80	2.32
Metatarsus	3.04	2.96	3.20	5.52	-
Tarsus	1.44	1.52	1.92	2.24	1.76
Total	17.76	12.80	15.76	21.28	10.48

**Scopula.** Metatarsi: I, full entire, hairs short, thin; II, similar but divided by scattered setae; III, two narrow triangles in distal half; IV, similar, distal 1/4, reduced to few hairs. Tarsi: I, full entire, hairs short, thin; II, similar but divided by line of setae widest distally; III, full, parted by setal band 6-8 wide; IV, similar but setal band as wide as each scopula band.

**Spines.** I: fe p1, d4w, pa 0, ti 0, me v1; leg 2, fe p1, d1w, pa 0, ti p2, v4, me v2. III: fe d1, r3, pa p1, ti p2, r2, v8, me p3, r3, v9. IV: fe d1, r1, pa p1, ti p4, r1, v8, me p3, r4, v11. Palp: fe p1 d4w, pa 0, ti p3 v6.

**Claws.** 3 teeth on I. (or 2) IV; palpal claw bare, slightly smaller than tufts.

**Trichobothria.** Two rows, each of 11 for full tibiae; c.19 on metatarsi; 3 small clavate and c.12 filiform in two bands on tarsi.

**Spermathecae.** Two, each a low wide mound with long slender lobe without apical enlargement arising from ventral face of mound.

**Spinnerets.** PMS absent. PLS length of basal, middle, apical, and total articles 1.20, 0.48, 0.20, 1.72, respectively.

## DISTRIBUTION &amp; HABITAT

Wandovale Station, an area of open grassland and eucalypt forest, northwest of Charters Towers, and near Emerald, northern and central Queensland, respectively.

**Ozicrypta etna** Raven & Churchill, sp. nov.  
(Figs 21C, 74, 84, 85, Table 7)

## MATERIAL EXAMINED

**TYPES.** Holotype ♂, Olsen's Caverns, The Caves, NW of Rockhampton, 23°10'S 150°29'E, vine thicket, DW, RR, 21 Apr-18 Jul 1990, QMS16442. Paratypes: 2♂♂, same data as holotype, QMS16443; ♀, Rosslyn Head, 23°10'S 150°47'E, vine thicket, 18 Jul-23 Oct 1990, DW, RR, KW, QMS18012; 3♂♂, same data as QMS18012, QMS18011; 4♂♂, c.5 km N of Yeppoon, near Rockhampton, 23°05'S 150°45'E, vine thicket, 4

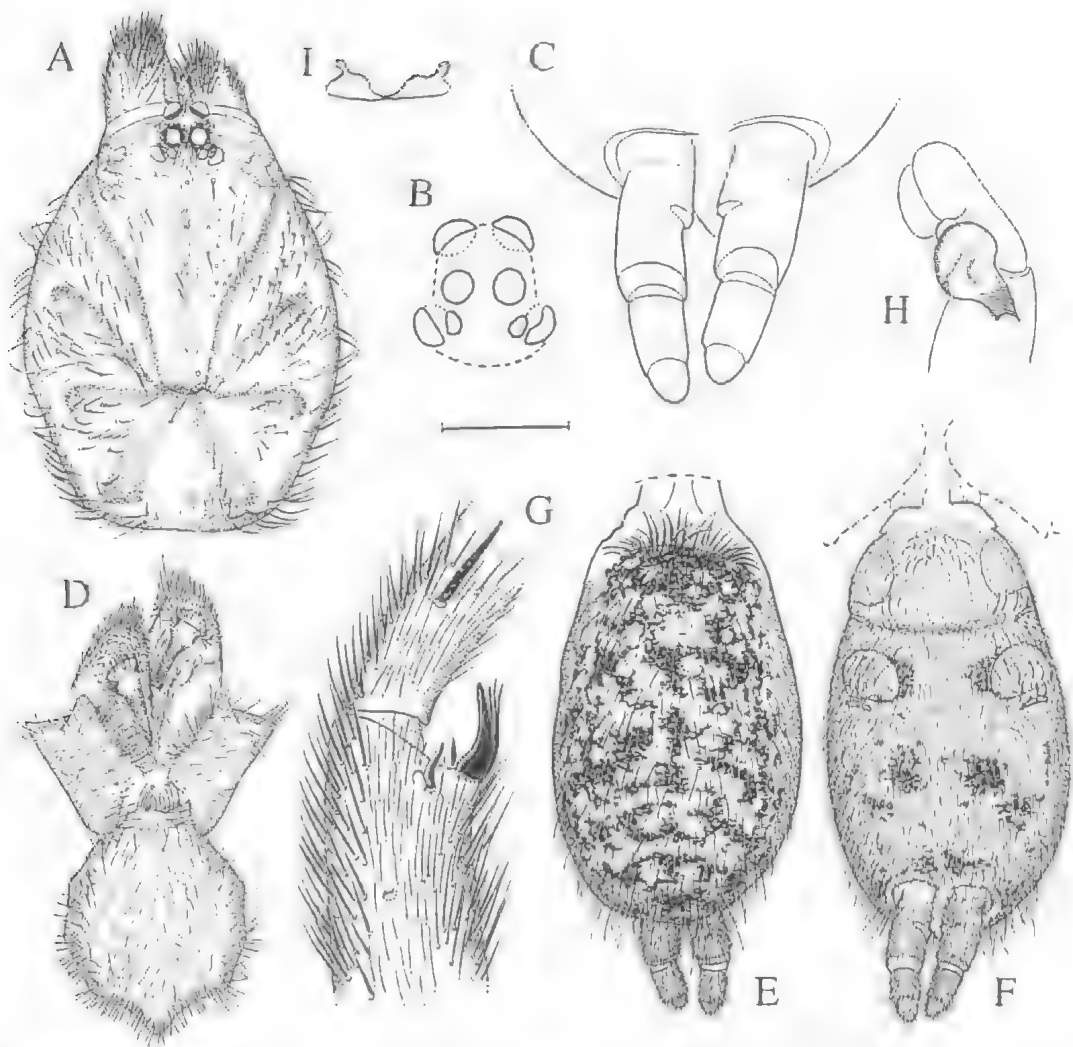


FIG. 84. *Ozicrypta etna* sp. nov., holotype ♂ QMS16442 (A-H) & paratype ♀ (I). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, spinnerets, ventral view; D, sternum, maxillae & labium, ventral view; E, F, abdomen, dorsal (E), ventral view (F); G, tibia & metatarsus I, prolateral view; H, palpal bulb, retrolateral view; I, spermathecae. Scale line = 1mm (A, D-F); 0.5mm (B, C, G, H).

Sep-11 Nov 1991, RR, PL, DW, QMS19106; ♂, same data, QMS19117. All in MEQ.

#### DIAGNOSIS

Differs from *O. clarki* in the smaller size and many fine ridges, rather than two keels, on the palpal bulb. Differs from the sympatric *Mandjelia qantas* in lacking posterior median spinnerets. Females differ from those of *O. littleorum* and *O. digglesi* in lacking both a rastellum and strong thorn spines on/near joints of femora-patellae III, IV.

PMS absent. 11-15 cuspules in inner corner of maxillae. Preening combs on pro- and retroventral metatarsi IV. Rastellum absent. FEMALES. Basifemoral thorns on I, II, IV. No scopula on metatarsi II, for 1/5 on IV. Spermathecae two, each a low mound with short undivided lobe laterally. MALES. Palpal bulb squat pyriform with two diagonally opposed keels and many low transverse ridges on convex face joining them; embolus short, pointed; retrolateral face of cymbium straight to convex; tibia I with distal conical spur with upcurved megaspine and

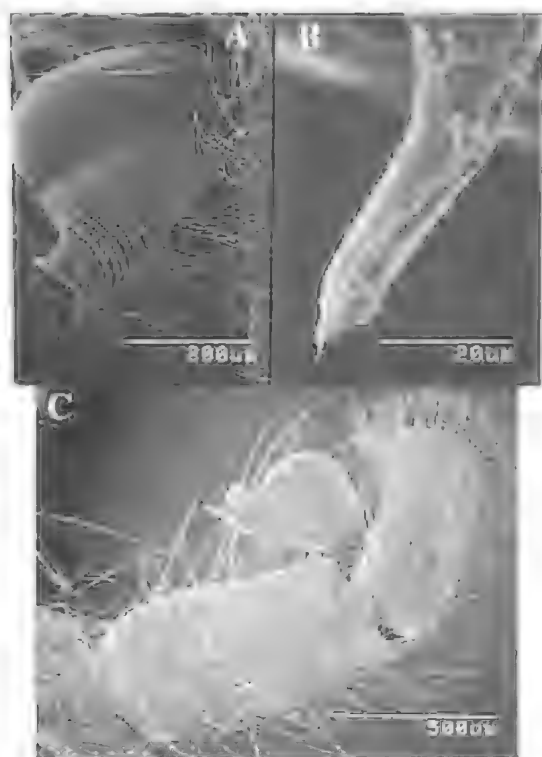


FIG. 85. Scanning Electron Micrograph, *Ozicrypta etna*. A, bulb; B, embolus tip; C, ♂ palpal tibia, cymbium & bulb.

group of strong bristles on spur tip below it; upper megaspine small, longer than wide, downcurved, with small ovoid microspur; claws with 1-4 short blunt teeth in medial keel.

#### ETYMOLOGY

A noun in apposition from the well known centre of conservation debate in central coastal Queensland, Mt Etna, a limestone complex of closed forests of which Olsen's Caves are part.

#### DESCRIPTION

##### HOLOTYPE MALE QMS16442

Carapace 3.25 long, 2.63 wide. Abdomen 3.13 long, 1.94 wide. Total length, 7.

**Colour.** Carapace, chelicerae, and legs yellow brown, lighter mottled areas on anterior lateral caput. Abdomen dorsally mostly white with discontinuous irregular brown lines; ventrally pallid with paired brown marks between posterior book-lungs, centrally, and in front of spinnerets.

**Carapace.** Pilosity: glabrous save for fine hairs on margins; uniform sparse cover of short black bristles longest on margins and anteromedial of fovea; only anterior striae distinct; 3-4 thick erect

black bristles beside posterior striae; 7 long bristles anteromedially; 6 bristles between PME, and 2 long thick in front of ALE; a line of 3 strong black bristles arises deep in fovea. Fovea short, procurved.

**Eyes.** Group occupies 0.27 of head-width; front width, back width, length, 26:38:34. Back row recurved. MOQ front width, back width, length, 23:23:18. AME:ALE:PME:PLE, 11:14:8:12. Eye interspaces: AME-AME, 0.3; AME-ALE, 0.6; ALE-ALE, 0.3; PME-PLE, 0; PME-PME, 1.0; ALE-PLE 1.3.

**Chelicerae.** Erect brown bristles and hairs prodorsally, laterally with band of short brown bristles. Rastellum entirely absent, no mound. Furrow promargin with 8 separated teeth, basomesally with no teeth or granules discernible.

**Labium.** 0.52 wide, 0.22 long. Labiosternal suture a shallow indistinct groove of two separated sigilla.

**Maxillae.** 0.85 long in front, 1.00 long behind, 0.51 wide; with 11-13 blunt cusps in inner angle. Heel angular, distinct; anterior lobe small, angular.

**Sternum.** 1.66 long, 1.51 wide. Sigilla all small, indistinct, marginal.

**Legs.** Tibia I with distal conical spur with upcurved megaspine and group of strong bristles on spur tip below it; upper megaspine small, longer than wide, downcurved, with small ovoid microspur. Femur III incrassate. Thorn spines absent. Preening combs: I of 2-4 setae on retroventral III, IV, and I of 3 setae proventral on IV.

	I	II	III	IV	Palp
Femur	2.33	2.06	2.06	2.88	1.45
Patella	1.52	1.36	1.12	1.31	0.88
Tibia	1.76	1.36	1.27	2.25	0.91
Metatarsus	1.30	1.15	1.58	2.56	-
Tarsus	0.82	0.85	0.97	1.25	0.61
Total	7.73	6.78	7.00	10.25	3.85

**Scopula.** Metatarsi: I, very sparse, in distal third; II, hardly noticeable; III, IV, absent. Tarsi: I, II, scopulate area pallid, full, thin, divided distally by line of setae; III, IV, widely divided by setal band as wide as ventral surface, thin, lateral.

**Spines.** I: fe d4, pa 0, ti p1, v2 + megaspines, me p1, v1. II: fe p1, d4, pa 0, ti p1, v5, me p2, v2. III: fe p3, d3, r3, pa p4, r1, ti p4, d2, r1, v8, me p5, r3, v5. IV: fe p1, d5, r1, pa p1, r1, ti p2, d3, r3, v7, me p4, r5, v10. Palp: fe p1, d5, pa 0, ti v3.

**Claws.** 4 (I) to 1 (IV) teeth in 1 row.

**Trichobothria.** Two rows, each of c.7 for length of tibiae; c.9 on metatarsi in strongly curved row; c.1 clavate and 11 filiform on tarsi.

*Palp.* Bulb squat pyriform with two diagonally opposed keels and many low transverse ridges on convex face joining them; embolus short, pointed.

*Spinnerets.* PMS absent. PLS length of basal, middle, apical, and total articles 0.54, 0.30, 0.26, 1.10, respectively.

#### ALLOTYPE FEMALE QMS18012

Carapace 4.44 long, 3.23 wide. Abdomen 3.67 long, 2.22 wide. Total length, 9.

*Colour.* Carapace yellow brown, chelicerae darker, and legs yellow brown not annulated. Abdomen (collapsed) dorsally brown with large white spots forming broad pallid Vee; ventrally pallid with brown patches beside posterior book-lung covers and posteriorly in front of spinnerets and forward to centre.

*Carapace.* Pilosity: sparsely clothed with fine black hairs, c.200 hairs on entire carapace; striae indistinct, narrow. Bristles: fine erect black beside posterior striae; 6-8 on caput midline; c.6 between PME, and c.6 between ALE; lateral margins almost glabrous. Fovea broad, procurved.

*Eyes.* Tubercle distinct. Group long, occupies 0.29 of head-width; front width, back width, length, 30, 36, 35, respectively. Back row procurved. MOQ front width, back width, length, 21, 21, 16, respectively. AME:ALE:PME:PLE, 10:13:7:10. Eye interspaces: AME-AME, 0.4; AME-ALE, 1.0; ALE-PLE, 1.5; PME-PME, 1.3; PME-PLE, 0.3; ALE-ALE, 0.6.

*Chelicerae.* Narrow band of short bristles prodorsally, laterally a band of fine hairs then glabrous. Rastellum absent, mound low, covered with c.10 thicker curved setae overhanging fang. Furrow promargin with 8 small teeth, basomesally with 10-15 fine granules.

*Labium.* 0.31 long, 0.63 wide. Labiosternal suture a narrow groove.

*Maxillae.* 0.88 long in front, 1.09 long behind, 0.59 wide; with 13-15 cuspules in inner angle. Heel broad; anterior lobe small, indistinct.

*Sternum.* 1.56 long, 1.44 wide. Sigilla all, small, oval, marginal.

*Legs.* 2-4 basifemoral thorns on midline of I, II, IV. Preening combs: I of 2-3 setae on pro- and retroventral IV.

*Scopula.* Metatarsi: I, very thin, hair short, in distal 1/3, mixed with setae; II, absent, save for few hairs; III, unknown presumably scopulate, IV, with two narrow triangles in distal 1/5. Tarsi: I, hair short, very thin, divided by setal band 2-4 wide; II, very thin, hairs short, widely divided by setal band 4-6 wide; III, missing; IV, absent.

*Spines.* I: 0. II: fe 0, pa 0, ti 0, me v1w + 2 distal. III: both missing. IV: fe d1 long basal, pa r1, ti p1, r2, v8, me p4, r4, v5. Palp: fe 0, pa 0, ti v1.

*Claws.* 1 small tooth on I, IV in medial keel; palpal claw small, bare.

*Trichobothria.* Two rows, each of c.7 for length of tibiae; c.10 on metatarsi in almost straight row; c.2 clavate and c.10 filiform on tarsi.

*Spermathecae.* Two, each a low mound with short undivided lobe laterally.

*Spinnerets.* PMS absent. Basal, middle, apical, total segments of PLS, 0.31, 0.17, 0.05, 0.53 long, respectively.

#### DISTRIBUTION & HABITAT

Narrow vine thicket fringes around the entrances of limestone caves in the Mt Etna region, north of Rockhampton, and in similar forest on sand, near Yeppoon, MEQ.

#### REMARKS

The ♀ is too poor in condition to provide data not evident in the ♂ and hence, save for the spermathecae, is not drawn.

#### MYGALOMORPHS SYMPATRIC

Olsen's Caverns: *Mandjelia quintax* sp. nov., *Trittame augusteyni* sp. nov. (Barychelidae); *Missulena* sp. (Actinopodidae); *Selenocosmia* sp. (Theraphosidae); *Aname pallida* (Nemesiidae).

Yeppoon: *Numea* sp. (Nemesiidae), *Ozicrypta wallacei* sp. nov., *Trittame augusteyni* (Barychelidae), *Arbanitis* sp. (Idiopidae, also at Rosslyn Head).

#### *Ozicrypta eungella* Raven & Churchill, sp. nov. (Figs 73, 86, Table 7)

#### MATERIAL EXAMINED

TYPES. Holotype ♀, Eungella, 21°08'S 148°29'E, 11-15 Feb 1986, RR, JAG, QMS7026; paratype ♀, Crediton, 21°13'S 148°34'E, complex notophyll vineforest on basalt, pitfall, 14-21 Apr 1975, VTD, RK, QMS17832. Both in MEQ.

#### OTHER MATERIAL EXAMINED

1 juvenile, Mt Dryander, 20°15'S 148°32'E, MEQ, Apr 1975, MG, CH, AM KS6539.

#### DIAGNOSIS

Females differ from ♀♀ *O. reticulata* in lacking posterior median spinnerets and from ♀♀ *O. commoni* and *O. clyneae* in the strong spines in the rastellum.

PMS absent. Maxillae with 13-25 cuspules. Rastellum on low mound with short strong



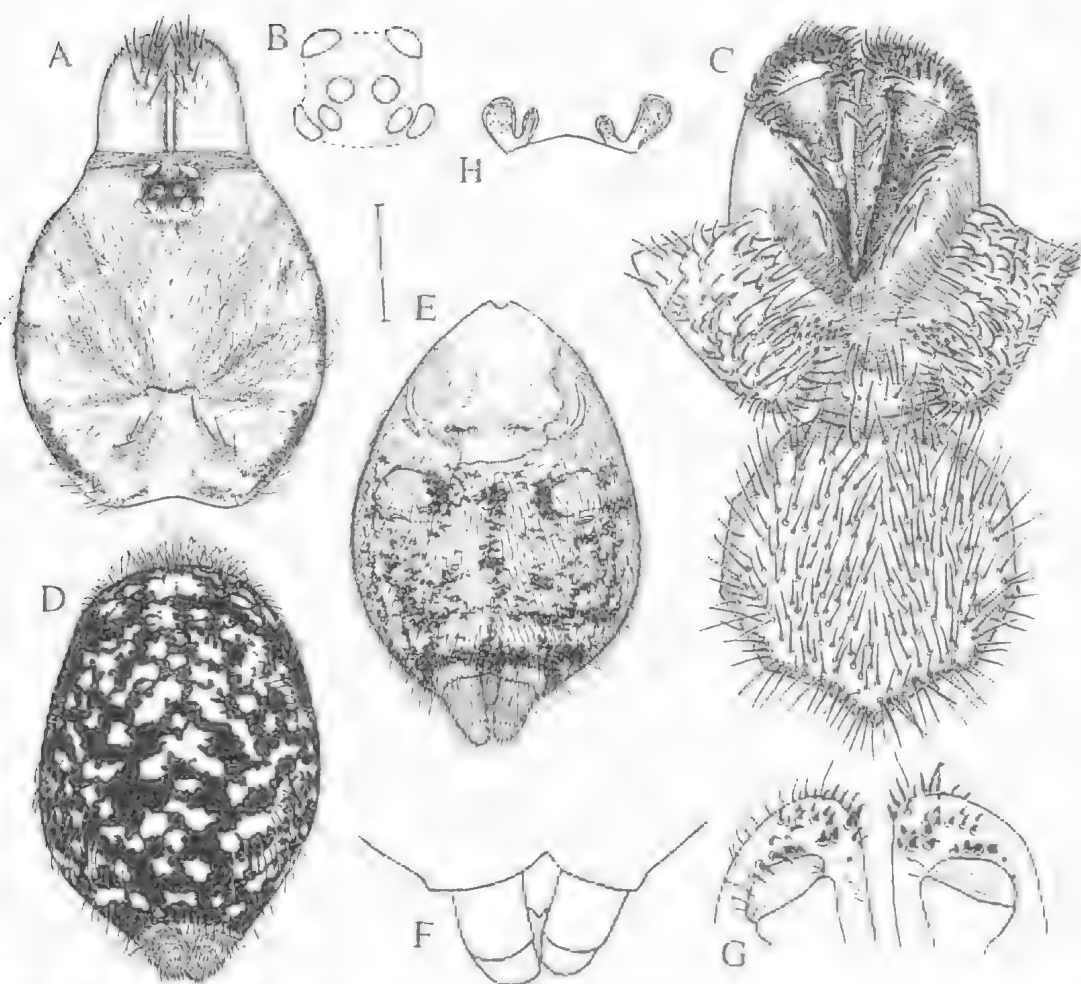


FIG. 86. *Ozicrypta eungella* sp. nov., holotype ♀ (QMS7026). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, sternum, maxillae, labium & chelicerae, ventral view; D, E, abdomen, dorsal (D), ventral view (E); F, spinnerets, ventral view; G, apical chelicerae with rastellum, ventral view; H, spermathecae. Scale line = 1.25mm (A, D, E); 0.6mm (B, C, F); 0.5mm (G); 0.25mm (H).

spines. FEMALES. Preening combs present. Basifemoral thorns absent. Very thin scopula on metatarsi II, none on III, IV. Spermathecae two, each with two lobes, outer lobe longer thicker but not a mound, inner shorter and more slender, the lobes join at common genital atrium. MALES. Unknown.

#### DESCRIPTION

##### HOLOTYPE FEMALE QMS7026

Carapace 3.80 long, 3.36 wide. Abdomen 4.93 long, 3.33 wide. Total length, 11.

**Colour.** Carapace orange brown with dark brown marks on posterior margins and light brown on posterior striae, chelicerae orange

brown, legs yellow brown. Abdomen dorsally mottled equally brown and white, ventrally white with brown flecking between book-lungs, in front of spinnerets, laterally and medially.

**Carapace.** Light pile of fine black bristles in interstitial ridges and on margins. Bristles: posterior striae flanked by thicker group; bases of 8-10 thick evident anteromedially and those flanked by band of shorter black; 4 thick bristles between PME; 1 thick and several thinner between ALE. Fovea moderately wide, procurved.

**Eyes.** Group occupies 0.36 of head-width; front width, back width, length, 31:37:27. Back row recurved. MOQ front width, back width, length, 21:24:16. AME:ALE:PME:PLE, 10:10:7:10.

Eye interspaces: AME-AME, 0.8; AME-ALE, 1.0; ALE-ALE, 1.8; PME-PLE, 0.2; PME-PME, 1.8; ALE-PLE, 1.8.

**Chelicerae.** Rounded; few long and many short bristles prodorsally, laterally asetose, almost glabrous. Rastellum a low mound with 15-20 short thick spines. Furrow promargin with 7 spaced teeth, basomesally with 3 small teeth and 10-15 granules.

**Labium.** 0.60 wide, 0.28 long. Labiosternal suture a narrow indistinct groove.

**Maxillae.** 1.16 long in front, 1.60 long behind, 0.84 wide; with 13-25 cuspules on slightly raised mound in inner angle. Heel broad, rounded; anterior lobe indistinct.

	I	II	III	IV	Palp
Femur	2.44	2.24	2.04	3.04	1.96
Patella	1.80	1.56	1.20	1.52	1.24
Tibia	1.56	1.40	1.20	2.24	1.08
Metatarsus	1.12	1.08	1.36	2.68	-
Tarsus	0.80	0.80	0.84	1.08	1.08
Total	7.72	7.08	6.64	10.56	5.36

**Sternum.** 2.08 long, 2.08 wide. Sigilla all small, oval, marginal.

**Legs.** Cover of short black bristles. Basifemoral thorns and thorn spines absent. Preening combs: 1 each of 2-3 on retroventral III, IV.

**Scopula.** On lower 180° of tarsi I, II. Metatarsi: I, hairs short, divided by setal band, full; II, sparse, in distal half, divided; III, IV, absent. Tarsi: I, hairs short, divided by setal band 2-3 wide; II, similar, setal band 3-4 wide; III, very thin, divided widely by spaced band of setae 4-5 wide; IV, setal band 5-6 wide, twice wider than each scopula band.

**Spines.** I: fe p1, d6w, pa 0, ti v1, me v2. II: fe p1, d3w, pa 0, ti p1, v2, me v2. III: fe p1, d4w, r1, pa p3, r1, v1, ti p2, r1, v7, me p3, r2, v7. IV: fe d3w, r1, pa p1, r1, v1, ti p2, r3, v8, me p4, r3, v9. Palp: fe d4w, pa 0, ti p3 v6.

**Claws.** 1 (IV) to 3 (I) teeth; palpal claw bare, slightly smaller than tufts.

**Trichobothria.** Two rows, each of c.8 for full tibiae; c.11 in curved row on metatarsi; no clavate, c.10 filiform on tarsi.

**Spermathecae.** Two, each with two lobes, outer lobe longer thicker but not a mound, inner shorter and more slender, the lobes join at common genital atrium.

**Spinnerets.** PMS absent. PLS length of basal, middle, apical, and total articles 0.58, 0.26, 0.12, 0.96 respectively.

#### DISTRIBUTION & HABITAT

In leaf litter in complex notophyll vineforest on basalt (rainforest) along the Dalrymple Range

between forest just north of Eungella and south to Crediton, MEQ.

#### MYGALOMORPHS SYMPATRIC

*Mandjelia thorelli* (Raven), *Trittame gracilis* (Koch), *Ozicrypta reticulata* (Koch) (Barychelidae); *Conothele* sp. (Ctenizidae); *Homogona* sp., *Cataxia* sp. (Idiopidae).

*Ozicrypta filmeri* Raven & Churchill, sp. nov.  
(Figs 75, 87-89, Table 6)

#### MATERIAL EXAMINED

**Types.** Holotype ♂, Glastonbury State Forest, near Widgee State Forest, 26°13'S 152°31'E, 17 Apr 1982, AR, QMS8254; allotype ♀, Casey Ck, via Imbil, 26°28'S 152°41'E, 90m, in rainforest, 10 Aug-9 Nov 1974, GSM, QMS16701; ♂, same data but 27 Mar-16 Jun 1975, QMS8253; ♂, Archookoora State Forest via Kumbia, 26°43'S 151°46'E, rainforest, pitfall trap, 1 May-14 Aug 1976, GSM, QMS8265; ♂, ♀, Little Yabba Ck via Kenilworth, 26°37'S 152°41'E, rainforest, pitfall trap, 16 Jun-13 Aug 1975, GSM, QMS8255; ♂, Gallangowan, 26°26'S 152°17'E, rainforest at 490m, 10 Nov-29 Dec 1974, GSM, QMS8251. All in SEQ.

#### OTHER MATERIAL EXAMINED

QMS8267 & 1 juv., Gallangowan, rainforest, 10 Nov-29 Dec 1974, GSM, QMS19044; 1 juv., Little Yabba Ck via Kenilworth, rainforest, pitfall, 16 Jun-13 Aug 1975, GSM, QMS8254; 1 juv., Casey Ck via Imbil, rainforest, pitfall trap, 27 Mar-16 Jun 1975, GSM, QMS8252. All in SEQ.

#### DIAGNOSIS

The most diagnostic character of both ♂ ♂ ♀ ♀ is the setation of the ventral surface of coxae I. The coxae are covered with very short, almost straight, thorn-like setae (Figs 88A, C) rather than a mix of long curved setae and hairs as on the maxillae and coxae II-IV. Males differ from ♂ *O. reticulata* in that the keels on the palpal bulb are parallel to the long axis and multiple keels reach at least to half the bulb length whereas in *O. reticulata* the keels are transverse and confined to the distal 1/3-1/4. Also, in *O. filmeri*, dorsally the abdomen is predominantly light, whereas in *O. reticulata* it is mostly dark. Females differ from ♀ ♀ *O. sinclairi* in having two distinct isolated brown areas centrally placed behind the posterior booklungs ventrally on the abdomen, in *O. sinclairi* the area is irregularly mottled with no isolated patches; in *O. cooloola* the patches are much larger.

PMS present, small. c.10-25 cuspules on maxillae. Rastellum absent; preening combs present.

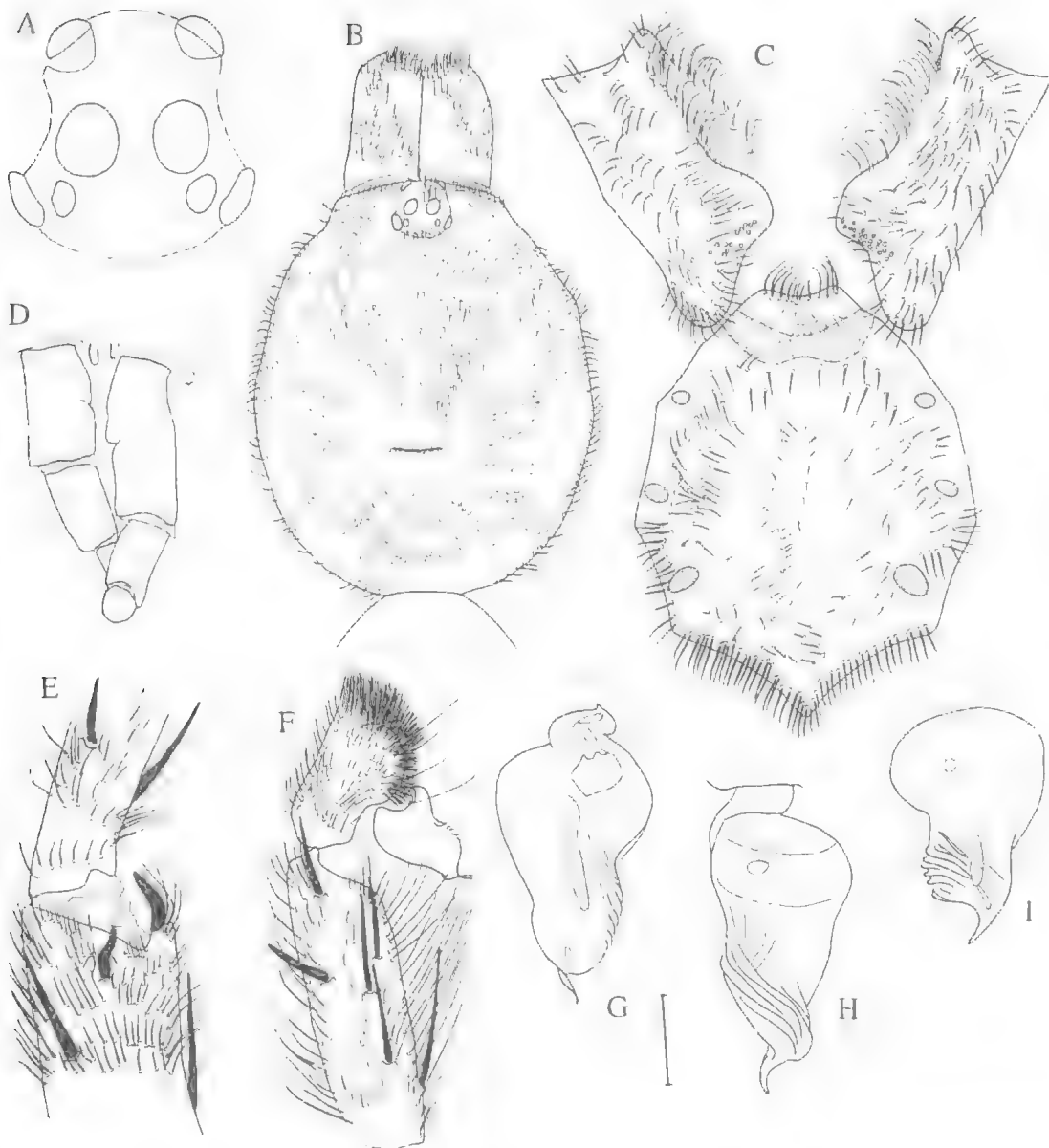


FIG. 87. *Ozicrypta filmeri* sp. nov., holotype ♂ (QMS8254). A, eye group, dorsal view; B, carapace & chelicerae, dorsal view; C, sternum, maxillae & labium, ventral view; D, spinnerets, ventral view; E, tibia & metatarsus I, prolateral view; F, cymbium & palpal bulb, prolateral view; G-I, palpal bulb, ventral (G), retrolateral (H) & prolateral views (I). Scale line = 0.5mm (A, G-I); 1mm (C-F); 2mm (B).

Ventral surface of coxae I generally covered with very short almost straight thorn-like setae. FEMALES. 2-8 basifemoral thorns on palp and legs I-IV. Scopula for 2/3-1/3 of metatarsi III, IV, respectively. Spermathecae two, each a low inner lobe with much longer outer lobe. MALES. Palpal bulb pyriform, twisted, with

c.6 low flanges distally; embolus very short with short translucent sclerotised flange; retrolateral face of cymbium straight to convex. Tibia I with short conical ventral spur with longer, strong megaspine. Claws with 2-4 teeth in 2 rows (leg I), and 1 on IV.

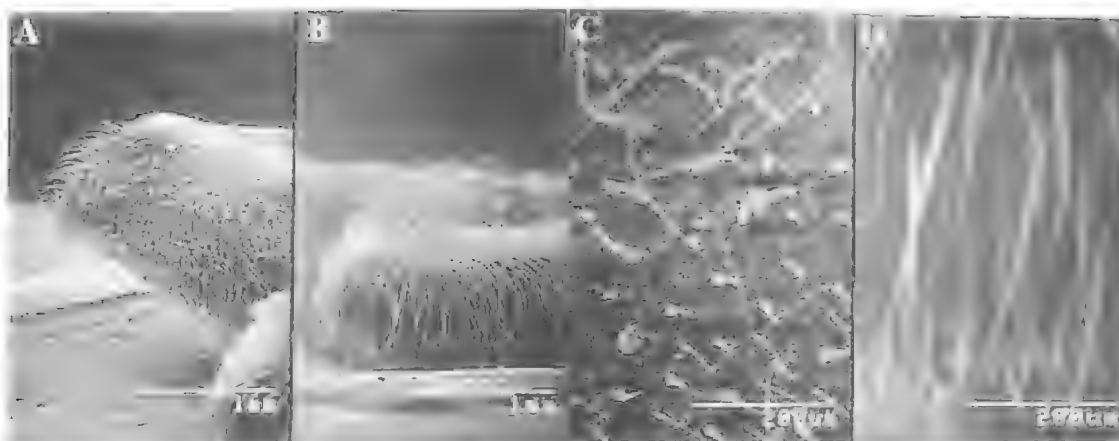


FIG. 88. Scanning Electron Micrograph *Ozicrypta filmeri*, ♂, ventral surface of coxae I, II showing short curved setae on I (A, C) & normal setation on II (B, D).

#### ETYMOLOGY

For Mr Ivor Filmer, notable Gympie naturalist and former staff member of the Queensland Museum.

#### DESCRIPTION

##### HOLOTYPE MALE QMS8254

Carapace 9.04 long, 7.36 wide. Abdomen 9.05 long, 5.60 wide. Total length, 19.

**Colour.** Carapace and chelicerae orange brown, legs yellow brown. Abdomen dorsally white with some brown mottling; ventrally yellow brown without darker markings.

**Carapace.** Pile of silver hairs and moderately long black bristles; lateral margins with long silver hairs and long black bristles. Bristles: no paired foveal; 3 thick in front of AME; several thick on clypeal edge; 2-3 irregular rows anteromedially. Striae narrow glabrous with thicker setae on margin. Fovea short, strongly procurved.

**Eyes.** Group occupies 0.21 of head-width: front width, back width, length, 49:68:55. Back row recurved. MOQ front width, back width, length, 42:45:32. AME:ALE:PME:PLE, 20:15:10:16. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.8; ALE-ALE, 1.2; PME-PLE, 0.3; PME-PME, 1.5; ALE-PLE, 1.6.

**Chelicerae.** Prodorsally and laterally with long bands with setae shorter in intermediate strip. Rastellum absent. Furrow promargin with 1 small tooth anteriorly and 7 long teeth, basomesally bare.

**Labium.** 1.40 wide, 0.52 long. Labiosternal suture wide, shallow.

**Maxillae.** 2.60 long in front, 3.28 long behind, 1.16 wide; with c.21 cuspules in 2 rows along

edge on low mound. Heel slightly angular; anterior lobe distinct.

**Sternum.** 3.96 long, 3.72 wide. Fine hair in margins but not on edge. Sigilla all, oval marginal; lengths of posterior, middle, anterior 0.44, 0.28, 0.20 long, respectively.

**Legs.** Coxae I ventrally with large field of short curved setae; field smaller on II, coxae of III, IV with many long and few short setae. Preening combs absent. Tibia I with short conical ventral spur with longer, strong megaspine; microspur short, thumb-like and c.one-third length of sinuous spine.

	I	II	III	IV	Palp
Femur	7.50	7.00	5.83	8.33	4.33
Patella	4.33	4.33	3.50	4.00	2.58
Tibia	5.50	4.83	4.50	6.33	3.08
Metatarsus	4.83	4.83	5.67	8.33	-
Tarsus	3.17	2.83	3.33	4.00	1.83
Total	25.33	23.82	22.83	30.99	11.82

**Scopula.** Metatarsi: I, II, full, entire; III, distal half, parted by setal band 2-3 rows wide; IV, two narrow bands laterally for distal third. Tarsi: I, II, full, entire; III, full, parted by setal band 2-3 rows wide; IV, full, setal band 3-4 rows wide.

**Spines.** I: fe p1, d6, r1, pa 0, ti p2, v6 + 2 megaspines, me p1 long, v2. II: fe p2, d6, r3, pa 0, ti p3, v5, me p1, v2. III: fe p5, d6, r5, pa p3, r1, ti p4, d10, r3, v4, me p4, d6, r4, v9. IV: fe p2, d6, r5, pa p2, r2, ti p5, d6, r6, v9, me p6, d7, r8, v12. Palp: fe p1, d4, r1, pa 0, ti p2, v5.

**Claws.** 3-4 teeth in each of 2 closely set rows on I; 4 in outer, 2 in inner rows on IV.

**Trichobothria.** Two rows, each of 10, for full length of tibiae; c.30 in curved row on metatarsi; several clavate and c.40 filiform on tarsi in band 3 rows wide.

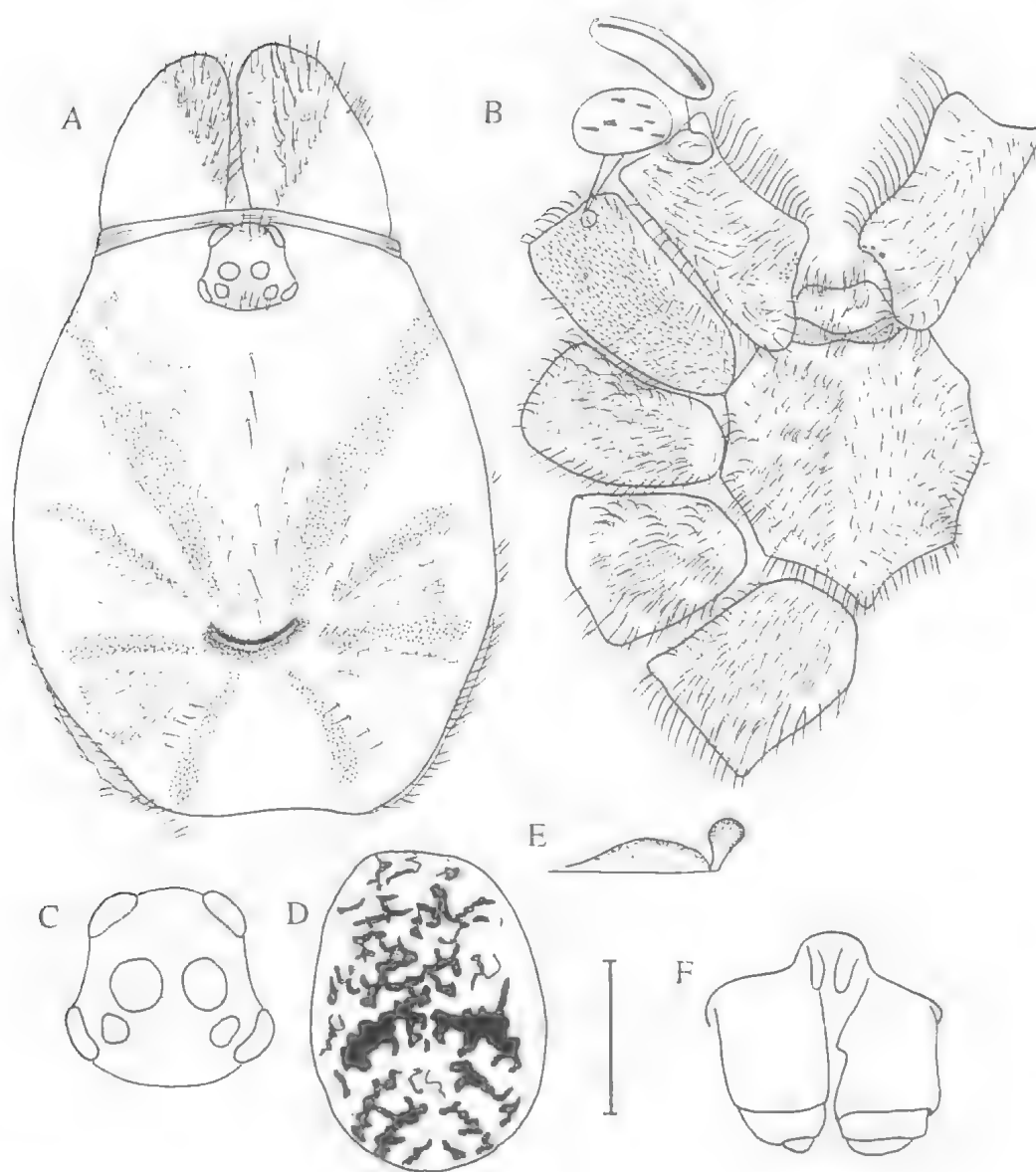


FIG. 89. *Ozicrypta filmeri* sp. nov., allotype ♀ (QMS16701). A, carapace & chelicerae, dorsal view; B, sternum, maxillae, labium & chelicerae, ventral view; C, eyes, dorsal view; D, abdomen, dorsal view; E, spermathecae; F, spinnerets, ventral view. Scale line = 1mm (C, F); 2mm (A, B); 4mm (D); 0.5mm (E).

**Palp.** Bulb pyriform, twisted and c.6 low flanges distally spiral to tip for distal half of bulb; embolus very short with broad translucent sclerotised flange; retrolateral face of cymbium straight to convex.

**Spinnerets.** PMS 0.24 long, 0.08 wide, 0.12 apart, c.0.13 of basal PLS in diameter. PLS length

of basal, middle, apical, and total articles 1.68, 0.72, 0.40, 2.80, respectively.

**ALLOTYPE FEMALE QM 16701**

Carapace 7.75 long, 6.25 wide. Abdomen 8.38 long, 6.06 wide. Total length, 18.

**Colour.** Carapace, chelicerae, and legs brown yellow, legs not annulated. Abdomen (pattern

faded) dorsally pallid with reticulated brown areas forming slight fishbone effect posteriorly; ventrally entirely pallid.

**Carapace.** Pilosity: uniform pile of fine brown hairs defining striae edges but not in radiating channels; striae indistinct, narrow. Bristles: c.6 long erect black beside posterior striae; c.7 thick anteromedially and many finer in band beside caput; c.5 thick and few finer between PME, and c.4 thick and few finer between ALE; light pile of golden hair and narrow band of brown bristles on lateral margins. Fovea short, strongly procurved.

**Eyes.** Tubercle low. Group occupies 0.24 of head-width; front width, back width, length, 65:85:69. Back row recurved. MOQ front width, back width, length, 50:58:44. AME:ALE: PME:PLE, 22:21:13:22. AME-AME, 0.5, AME-ALE, 0.6, ALE-ALE, 1.3, PME-PLE, 0.1, PME-PME, 1.6; ALE-PLE 1.3.

**Chelicerae.** With few long brown and many short bristles prodorsally in wide band, laterally lightly setose. Rastellum absent save for few long curved bristles overhanging fang. Furrow promargin with 8 small spaced teeth, basomesally with c.8 very small teeth and c.12 granules extending to basal 3/8.

**Labium.** 1.44 wide, 0.78 long; c.10 long bristles across midline, and band of smaller behind those. Labiosternal suture is two separated narrow sigilla.

**Maxillae.** 2.19 long in front, 2.88 long behind, 1.47 wide; with 10 blunt cuspules in inner angle, not on mound. Heel produced; anterior lobe conical.

**Sternum.** 3.84 long, 3.65 wide. Sigilla: posterior pair in distinct groove, largest, other pairs small, oval, marginal.

**Legs.** Setation of ventral surface of coxa I different to maxillae and coxae II-IV, generally covered with very short almost straight thorn-like setae rather than mix of long curved setae and hairs. 2-8 basifemoral thorns on palp and I-IV, least on III, most on IV. Thorn spines absent but line of long strong curved setae prolaterally on distal edge of femora III and to lesser extent IV. Preening combs: 1 of 3 strong setae on retroventral III, IV and 2 close spines proventrally on distal metatarsi III, IV.

	I	II	III	IV	Palp
Femur	5.00	4.56	4.37	5.43	3.62
Patella	3.18	3.12	2.75	3.18	2.37
Tibia	3.43	3.12	2.81	4.18	2.18
Metatarsus	2.56	2.56	3.25	5.18	-
Tarsus	1.81	1.93	1.93	2.37	2.06
Total	15.98	15.29	15.11	20.34	10.23

**Scopula.** Metatarsi: I, II, full, dense, entire; III, in distal 2/3, divided by setal band 2-4 wide; IV, two narrow triangles in distal 1/3. Tarsi: I, II, full, dense, entire; III, divided by narrow setal band 4-6 wide; IV, divided by narrow setal band 6-8 wide.

**Spines.** I: fe p1 d1w, pa 0, ti v2, me v2. II: fe p1, d1w, pa 0, ti p2, v2, me v2. III: fe d1, r3, pa p3, r2, ti p2, r2, v8, me p4, r4, v10. IV: fe d1, r1, pa r1, v1, ti r3, v9, me p3, r5, v12. Palp: fe p1, pa 0, ti p1, v8.

**Claws.** 2 teeth in outer face (I, IV); palpal claw slightly smaller than paired claws, bare.

**Trichobothria.** Two rows, each of c.10 for 2/3 of tibiae; c.6 on metatarsi in short curved row; c.8 small clavate and c.10 filiform on tarsi.

**Spermathecae.** Two, each a low inner lobe with much longer outer lobe.

**Spinnerets.** PMS 0.21 long, 0.06 wide, 0.20 apart, c.0.11 of basal PLS in diameter. PLS length of basal, middle, apical, and total articles 0.88, 0.13, 0.03, 1.04, respectively.

#### DISTRIBUTION & HABITAT

Rainforest from the Conondale Range, Archookoora State Forest, north to Glastonbury State Forest, SEQ.

#### REMARKS

The distribution of the field of short setae in ♂♂ shows some variability: in QMS8265 (Archookoora State Forest), it is only in the distal half of coxa I whereas in ♂♂ from elsewhere (QMS8251, QMS8253) it covers the entire ventral surface.

**Ozicrypta hollinsae** Raven & Churchill, sp. nov.  
(Figs 74, 90, Table 7)

#### MATERIAL EXAMINED

TYPE. Holotype ♂, Mt Chalmers, MEQ, C. Hollins property, open eucalypt forest, 23°20'S 150°40'E, pitfall trap, DW, RR, 20 Apr-18 Jul 1990, QMS16656.

OTHER MATERIAL EXAMINED. ♀, Mt Chalmers, 24 Oct 1990, RR, QMS19676; juv., same locality, QMS19696.

#### ETYMOLOGY

For Ms Chris Hollins for her much appreciated co-operation in the Queensland Museum Spider Pitfall Trapping Program, 1990-1995.

#### DIAGNOSIS

Differs from *O. combeni* in the smaller keel on the palpal bulb, larger anterior lateral and posterior eyes, and weaker setae on the carapace.



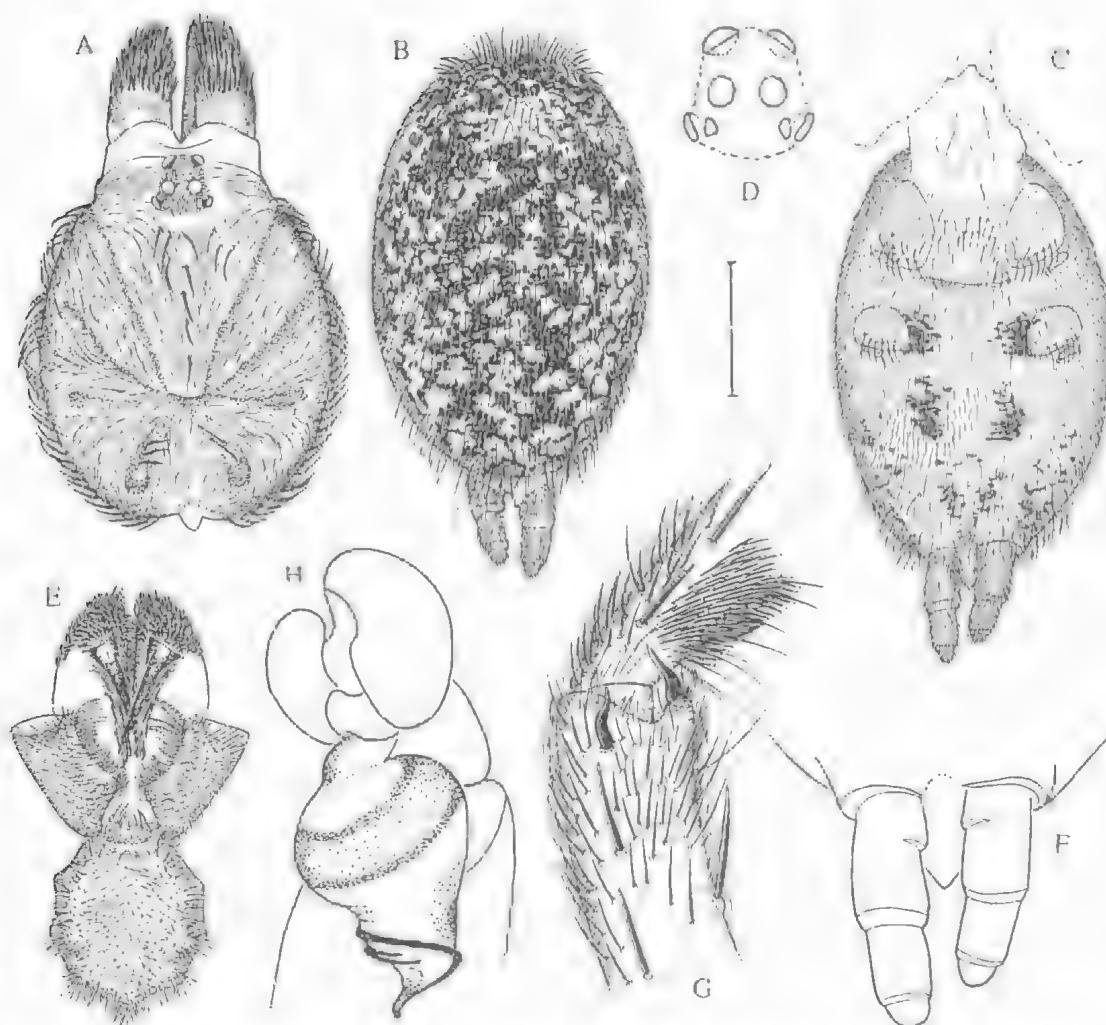


FIG. 90. *Ozicrypta hollinsae* sp. nov., holotype ♂ (QMS16656). A, carapace & chelicerae, dorsal view; B, C, abdomen, dorsal (B), ventral view (C); D, eye group, dorsal view; E, sternum, maxillae & labium, ventral view; F, spinnerets, ventral view; G, tibia & metatarsus I, prolateral view; H, palpal bulb, ventral view. Scale line = 3mm (A-C, E); 1.5mm (D, G); 0.7mm (H, F).

PMS absent. Maxillae with 4-5 cuspules. Rastellum a low mound with short setae. FEMALES. Basifemoral thorns absent. Preening combs present; band of short strong conical thorn setae along edges of femora III, IV and on adjacent patellar faces. Spermathecae unknown. MALES. Two rows of teeth on claws. Tibia I with proventral distal conical spur with stout, curved megaspine, upper megaspine elongate, strong, angular, without microspur. Bulb pyriform with short broad twisted embolus and two close low keels. Retrolateral face of cymbium straight to convex.

#### DESCRIPTION

##### HOLOTYPE MALE QMS16656

Carapace 5.50 long, 4.62 wide. Abdomen 7.06 long, 4.37 wide. Total length, 15.

*Colour.* Carapace dark brown, anterior striae slightly lighter, chelicerae dark brown, and legs yellow brown with brown markings distally on femora and laterally on patellae; setae on ventral and retrolateral faces of femora with bases strikingly circled in brown. Abdomen dorsally brown with uniform white mottling about equal area to brown; ventrally pallid, brown patches on inner corners of posterior booklungs, centrally, and smallest in front of spinnerets.

**Carapace.** Pile of long golden brown hairs, densest on caput and lateral margins; with uniform layer of encumbent black bristles; anterior striae distinct, glabrous, rest indistinct, obscured by hair and setae. Bristles: 4-6 erect; black beside posterior striae; band of black 3-4 rows wide anteromedially and beside caput; 6 long thick and several finer between PME, and 8 long thick and few finer between ALE; long golden hairs and strong black on lateral margins. Fovea short, straight, transverse.

**Eyes.** Group occupies 0.28 of head-width; front width, back width, length, 48:65:58. Back row straight. MOQ front width, back width, length, 45:47:34. AME:ALE:PME:PLE, 17:21:13:17. Eye interspaces: AME-AME, 0.6; AME-ALE, 1.0; ALE-ALE, 0.8; PME-PLE, 0.0; PME-PME, 1.7; ALE-PLE 1.7.

**Chelicerae.** Pile of golden brown hairs and short black bristles prodorsally, laterally pile thinner. Rastellum a low distinct mound, long weak bristles overhang fang, short spines on most anterior curve. Furrow promargin with 8 separated small to moderately large teeth, basomesally without teeth. Intercheliceral tumescence absent.

**Labium.** 0.91 wide, 0.39 long. Labiosternal suture two large sigilla medially separated by ridge 0.12 wide.

**Maxillae.** 1.45 long in front, 2.12 long behind. 0.97 wide; with 4-5 cuspules in inner angle. Heel rounded; anterior lobe distinct, angular.

**Sternum.** 2.88 long, 2.48 wide. Sigilla all small, oval, marginal.

**Legs.** Tibia I with proventral distal conical spur with stout, curved megaspine, upper megaspine elongate, strong, angular, without microspur. Thorn spines short, distinct, slender on distal femora III, IV, proximal patella III, IV. Preening combs: 1 of 3 weak setae on retroventral IV. Metatarsi I, II incrassate in scopulate half; all scopulate areas of metatarsi and tarsi pallid.

	I	II	III	IV	Palp
Femur	4.50	3.88	3.75	5.00	2.69
Patella	3.00	2.63	1.00	2.50	1.69
Tibia	3.56	2.88	2.56	4.13	1.94
Metatarsus	2.63	2.44	2.81	4.63	-
Tarsus	1.50	1.50	1.44	1.69	1.13
Total	15.19	13.33	11.56	17.95	7.45

**Scopula.** Metatarsi: I, II, in distal half, moderately dense, entire; III, two narrow sparse bands in distal third; IV, similar, in distal fifth. Tarsi: I, II, full, moderately dense, short, almost confined to ventral surface, entire; III, full, long, thin, divided by setal band 6-8 wide; IV, thin, long, divided by setal band 8-10 wide.

**Spines.** I: fe p2, d4, pa 0, ti p3, v5 + 2 megaspines, me p2 (1 long medial), v1, II: fe p2, d4, pa v1, ti p2, v7, me p2 (1 long medial), v0. III: fe p3, d3, r3, pa p1, ti p2, d2, r2, v8, me p3, d2, r3, v7. IV: fe p1, d3, r2, pa p2, ti p2, d4, r2, v9, me p3, d6, r3, v6. Palp: fe p1, d3, pa 0, ti p2, v3.

**Claws.** 3 (IV)-5 (I) teeth in each of two juxtaposed rows on claws.

**Trichobothria.** Two rows, each of 10 for full length of tibiae; c.8 on metatarsi in strongly curved row; c.10 clavate (no filiform) on tarsi.

**Palp.** Bulb pyriform with short broad twisted embolus and two close low keels. Retrolateral face of cymbium straight to convex. Tibial groove in distal two-thirds.

**Spinnerets.** PMS absent. PLS length of basal, middle, apical, and total articles 0.82, 0.48, 0.24, 1.54, respectively.

#### DISTRIBUTION, HABITAT & BIOLOGY

Open eucalypt forest at Mt Chalmers, just east of Rockhampton, MEQ. The burrow is a short (4-6cm) lidded tube constructed in leaf litter at the base of eucalypt trees. The egg sac is a thin walled translucent ball about 1cm in diameter; it was found with the ♀ in October with 21 pallid embryos.

#### REMARKS

The only adult female taken lost its abdomen during capture; available diagnostic characters of the ♀ are taken from that.

#### SYMPATRIC MYGALOMORPHS

*Aname pallida* Koch (Nemesiidae).

#### *Ozicrypta kroombit* Raven & Churchill,

sp. nov.

(Figs 10H, 15C, 18A-D, 21C, 75, 91. Table 6)

#### MATERIAL EXAMINED

**TYPES.** Holotype ♀. Kroombit Tops, rainforest at 1050m, 24°22'S 151°01'E, 22-26 Feb 1982, RR, DY, GBM, GC, QMS11243. Paratypes, same general locality and habitat: ♀, Lower Dry Ck, 9-19 Dec 1983, VTD, JAG, QMS8201; 4 ♀♀, sieved litter, 22 Feb-26 Oct 1982, GBM, GT, QMS8202; ♀, 22-26 Feb 1982, RR, GBM, DY, GC, T. Jorgensen, S8223; ♀, under logs, 25 Feb 1982, RR, GC, QMS8212; ♀, Site 4, 24°25'S 151°03'E, sieved litter, 15 Dec 1983, GBM, VTD, JAG, GT, QMS8224; ♀, 22-26 Feb 1982, GBM, DY, GT, QMS9232. All in SEQ.

#### DIAGNOSIS

Females differ from the sympatric *O. microcauda* in the larger posterior median spin-

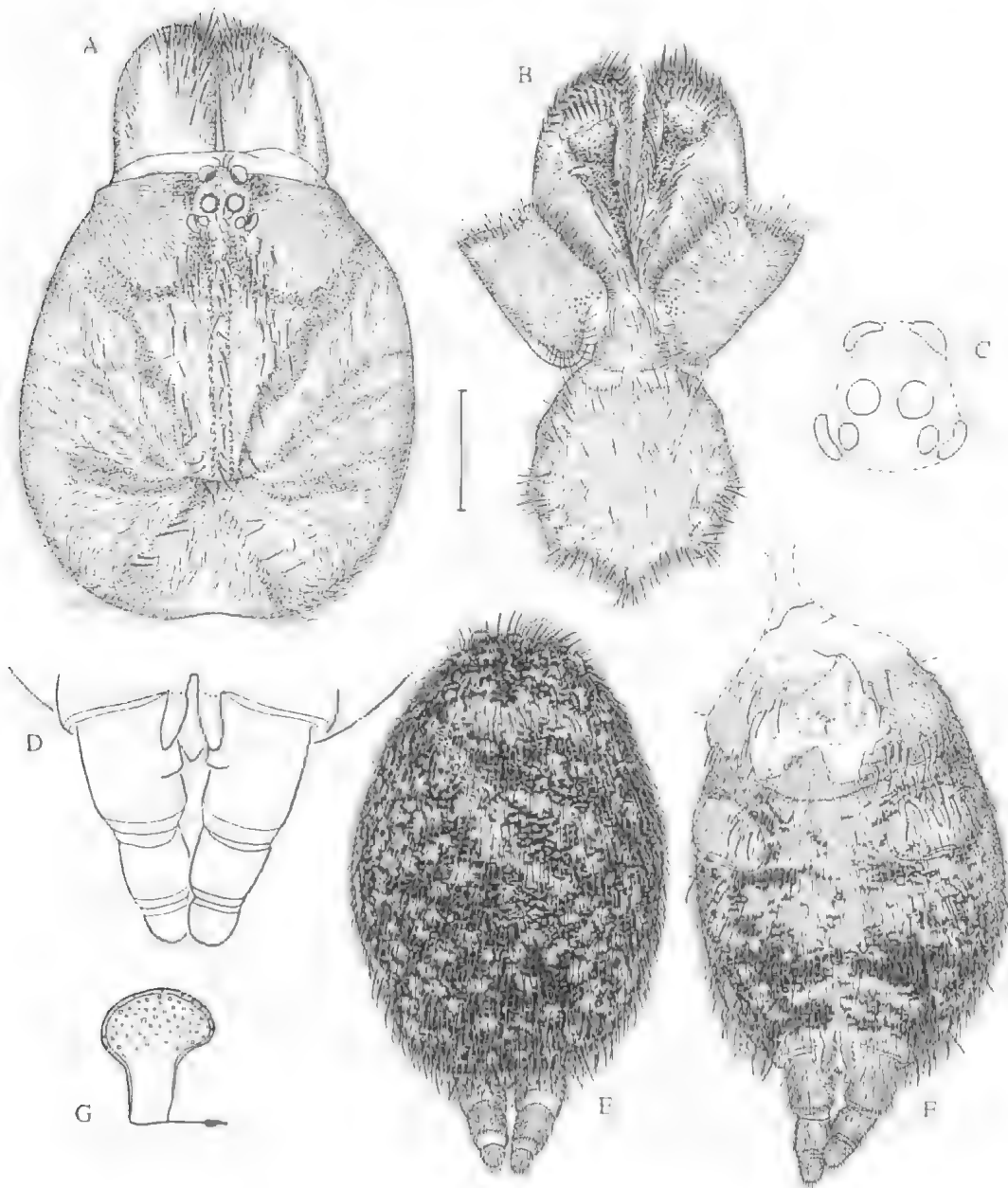


FIG 91. *Ozicrypta kroombit* sp. nov., holotype ♀ (QMS11243). A, carapace & chelicerae, dorsal view; B, sternum, maxillae & labium, ventral view; C, eye group, dorsal view; D, spinnerets, ventral view; E, F, abdomen, dorsal (E), ventral view (F); G, spermathecae. Scale line = 3mm (A, B, E, F); 1.5mm (C); 0.7mm (D); 0.5mm (G).

nerets and from *Seqocrypta mckeowni* in the mushroom-shaped spermathecae.

PMS present. 11-15 cuspules on inner edge of maxillae. Rastellum absent. FEMALES. Scopula thin, divided, triangular on metatarsi III, Basifemoral thorns absent. Spermathecae two,

each a low mushroom-shaped mound. MALES Unknown.

#### ETYMOLOGY

From an aboriginal name for the area,

## DESCRIPTION

## HOLOTYPE FEMALE QMS11243

Carapace 7.44 long, 6.64 wide. Abdomen 7.36 long, 5.12 wide. Total 18.

**Colour.** Carapace, chelicerae and legs orange brown. Abdomen dorsally brown with white mottling; ventrally mostly brown with irregular pallid area in front of and between PMS, and behind book-lungs.

**Carapace.** Pile of fine black bristles, cuticle not obscured. Bristles: 5 foveal pairs; 3 long in front of AME; none on clypeal edge; 10-15 anteromedian; 6 long between PME; striae glabrous. Fovea broad, procurved.

**Eyes.** Group occupies 0.25 of head width; front width: back width: length, 43:62:57. MOQ length:front width:back width, 29:37:43. Back row slightly recurved, AME:ALE:PME:PLE, 15:18:11:20. Eye interspaces: AME-AME, 0.6; AME-ALE, 0.9; ALE-PLE, 1.9; PME-PLE, 0.1; PME-PME, 1.5; ALE-ALE, 0.7.

**Chelicerae.** Broad, rounded; triangular band of moderately long black bristles. Rastellum absent. Promargin with 9 teeth; basomesally with 8 small teeth and 10-15 fine granules.

**Labium.** 0.58 long, 1.33 wide; 8-10 setae behind medial transverse ridge; labiosternal suture a broad continuous groove.

**Maxillae.** 2.25 long in front, 3.08 long behind, 1.67 wide; 11-15 cuspules on inner edge on low mound; heel produced, anterior lobe small, distinct.

**Sternum.** 3.92 long, 3.67 wide. Sigilla posterior pair slightly remote from margin, c.10% of sternal width; others small, distinct, oval, marginal; inner edge of maxillary heel, and coxae I, II, strongly projecting to form distinct ledge.

**Legs.** Basifemoral thorns and thorn spines absent. Preening combs: 1 of 2 retroventrally on III; 6 setae in one group on IV. All legs of similar girth.

	I	II	III	IV	Palp
Femur	4.50	3.92	3.75	5.42	3.67
Patella	3.75	3.17	2.92	3.42	2.67
Tibia	3.08	2.83	2.42	4.00	2.25
Metatarsus	2.17	2.25	3.08	5.17	..
Tarsus	1.42	1.42	1.50	1.83	1.67
Total	14.92	13.59	13.67	19.84	10.26

**Scopula.** On lower 180-200° of tarsi. Metatarsi: I, II, full, thin, divided 2/3; III, thin, 1/3, triangular, divided; IV, none. Tarsi: I, II, full, divided by 2-3 lines of setae; III, parted by setal band 6-8 wide; IV, 10-12 rows of setae part scopula.

**Spines.** Leg I: fe p1, d1, pa 0, ti p1, v2, me v2. Leg II: fe p1, pa 0, ti p1, v2, me v2. Leg III: fe p1, r3, pa p3, r1, ti p2, r3, v11, me p4, r4, v11. Leg

IV: fe r2, pa p1, r1, ti p1, r4, v18, me p5, r5, v20; palp: fe p1, elsewhere 0.

**Claws.** All leg claws of similar size; with 1-2 small teeth medially. Palpal claw bare, slightly smaller than tufts.

**Trichobothria.** c.9 in each of two rows for full length of tibiae; curved row of c.12 on metatarsi, row curved strongest on legs I, II; 15-20 on tarsi in two irregular bands; 3-5 proximal small clavate.

**Spermathecae.** Two, each a low mushroom-shaped mound.

**Spinnerets.** PMS 0.48 long, 0.20 wide, 0.08 apart, and 0.23 of PLS basal diameter. Basal, middle, distal, total articles of PLS, 1.04, 0.48, 0.32, 1.84, long respectively.

## DISTRIBUTION, BURROW, &amp; HABITAT

Rainforest at Kroombit Tops, south-west of Rockhampton, MEQ. The burrow was a short web tube in the litter with a door at each end.

## REMARKS

Females of *O. kroombit* differ from those of *O. microcauda* in the spermathecae and spinnerets and in the scopula being almost absent on metatarsi III but almost half its length in *O. microcauda*. In all specimens (carapace length 4-8mm), the pattern on the ventral abdomen, eye shape and lack of basifemoral thorns are consistent with the holotype.

*Ozicrypta lawlessi* Raven & Churchill, sp. nov.  
(Figs 72, 73, 92. Table 7)

## MATERIAL EXAMINED

TYPE. Holotype ♀, Rose Bay, Bowen, NEQ, 20°00'S 148°16'E, vine thicket, 27 Jul-2 Dec 1992, RR, PL, MS, QMS20802.

## DIAGNOSIS

Differs from *O. littleorum* in smaller rastellar mound and from *O. digglesii* and *O. littleorum* in the aspinose patella to metatarsus I, II.

PMS absent. 5-8 cuspules on maxillae. Rastellum a distinct rounded mound of many long curved spines. FEMALES. Scopula in distal half of metatarsi III. Basifemoral thorns numerous on dorsal setose band of femora but none on prolateral or retrolateral faces as in other species. Thorn spines absent but strong and dense setal comb on distal patella-prolateral femora III, IV. Preening combs absent. Spermathecae, Two, each a broad truncate cylinder and short slender lateral lobe. MALES. Unknown.

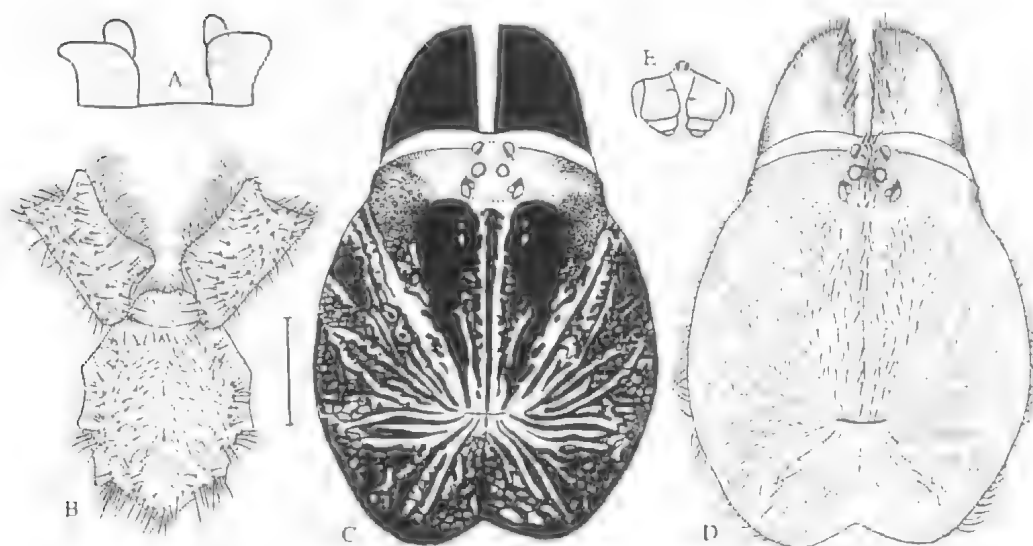


FIG. 92. *Ozicrypta lawlessi*, holotype ♀ (QMS20802). A, spermathecae, ventral view; B, sternum, maxillae & labium, ventral view; C, D, carapace & chelicerae, dorsal view, showing pattern (C) & setation (D); E, spinnerets, ventral view. Scale line = 2mm (B-D); 1mm (E); 0.5mm (A).

#### ETYMOLOGY

For Mr Philip Lawless.

#### HOLOTYPE FEMALE QMS20802

Carapace 7.63 long, 6.56 wide. Abdomen 9.06 long, 5.50 wide. Total length, 19.

**Colour.** Carapace orange brown strikingly dissected by reticulated dark brown channels, chelicerae dark reddish brown, and legs yellow brown, not annulated. Abdomen dorsally brown with large white mottling of similar area to brown; ventrally pallid.

**Carapace.** Pilosity: uniform pile of short silver hairs and black bristles confined to darker channels; striae distinct, narrow. Bristles: 4-5 erect black beside posterior striae; 10-15 anteromedially and 20-30 in band beside caput; 7 long thick and few finer between PME, and 8 long thick and few finer between ALE; short silver hairs and short brown bristles on lateral margins. Fovea short, procurved.

**Eyes.** Back row straight. Group occupies 0.21 of head-width; front width, back width, length, 55, 80, 73, respectively. MOQ front width, back width, length, 55, 60, 41, respectively. AME:ALE:PME:PLE, 24:20:12:19. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.9; ALE-PLE, 1.6; PME-PME, 1.7; PME-PLE, 0; ALE-ALE, 0.8

**Chelicerae.** Stout; narrow band of 10-15 long strong straight bristles and many finer prodorsally, laterally a broad diffuse band of fine bristles. Rastellum a distinct rounded mound of many long curved spines over inner corner but centred on anteriormost point of paturon. Furrow promargin with 8 strong spaced teeth, basomesally with 10-15 small teeth and granules.

**Labium.** 0.63 long, 1.38 wide. No pattern of setation evident. Labiosternal suture a broad continuous groove.

**Maxillae.** 2.19 long in front, 2.88 long behind, 1.50 wide. Surface distinctly flattened; 5-8 strong pointed cusps along inner edge. Heel rounded, produced; anterior lobe distinct, small, conical.

**Sternum.** 4.06 long, 3.44 wide. Sigilla all small, oval, marginal, indistinct.

**Legs.** Many basifemoral thorns on dorsal setose band of femora but none on prolateral or retrolateral faces as in other species. Thorn spines absent but strong and dense setal comb on distal patella-prolateral femora III, IV. Preening combs absent.

	I	II	III	IV	Palp
Femur	5.06	4.38	4.06	5.44	3.75
Patella	3.81	3.25	2.69	3.25	2.50
Tibia	3.63	3.13	2.69	4.63	2.19
Metatarsus	2.63	2.50	3.25	5.25	—
Tarsus	1.44	1.50	1.69	1.88	1.88
Total	16.57	14.76	14.38	20.45	10.32

**Scopula.** Metatarsi: I, II, full, dense, entire but hairs short; III, in distal 1/2, divided by setal band; IV, in two sparse distal groups. Tarsi: I, II, full, dense, entire, hairs short; III, divided by narrow setal band 6-8 wide; IV, divided by wide setal band 4-6 wide.

**Spines.** I & II: fe p1, d1, rest, 0, III: fe p1, r2, pa p1, ti p1, r2, v7, me p2, r2, v5, IV: fe d1, r1, pa 0, ti r2, v8, me p2, r3, v7. Palp: fe p1, pa 0, ti p1, v3.

**Claws.** Short wide shaft with short hook bearing 2 (IV)-3 (I) teeth medially; all leg claws evident above tufts; palpal claw clearly smaller than tuft, bare.

**Trichobothria.** Two rows, each of c.10 for length of tibiae; c.12 on metatarsi in curved row; no clavate and c.10 filiform on tarsi.

**Spermathecae.** Two, each a broad truncate cylinder and short slender lateral lobe.

**Spinnerets.** PMS absent; no hair tufts evident. Basal, middle, apical, total segments of PLS. 0.88, 0.31, 0.13, 1.32 long, respectively.

#### DISTRIBUTION & HABITAT

Known only from a small area of vine thicket at Rose Bay near Bowen, NEQ. In 1992, the area was being fast overrun by a real estate development.

#### REMARKS

The wider but sparser band of setae on tarsi IV is unusual; setal bands on IV are typically denser and wider than on III.

#### *Ozicrypta littleorum* Raven & Churchill,

sp. nov

(Figs 10C, 11B, D, E, 14F, 21D, 72, 93, Table 7)

#### MATERIAL EXAMINED

**Types.** Holotype ♀, Mt Molloy, 116°41'S 145°20'E, 1974, P. & F. Little, QMS8228. Paratypes: ♀, same data, QMS16912; ♀, Kirwan, Townsville, 19°12'S 146°46'E, 10 Aug 1980, Queensland Ambulance Transport Brigade (Kirwan), QMS19045; ♀, Toomulla Beach, Rollingstone, 21 Aug 1988, J. Clark, QMS17736; ♀, Isabella Falls, west of Cooktown, 15°23'S 145°02'E, 2 Jan 1982, R. Scouler, QMS8227; ♀, Mt Elliot National Park, 19°29'S 146°58'E, open forest, 26 Oct 1991, RR, PL, QMS19114. All in NEQ. **OTHER MATERIAL EXAMINED.** Juv., Davies Ck National Park, 17°00'S 145°34'E, 29 Oct 1991-23 Jul 1992, PL, RR, MS, QMS19694, NEQ.

#### DIAGNOSIS

Females differ from those of *O. digglesii* in the very pronounced rastellar mound, from those of *O. etna* in having strong thorn spines near the joint of femora-patellae III, IV, and from *O.*

*wrightiae* in having the larger rastellum and being much larger. Differs from ♀ *Synothele pectinata* in having basifemoral thorns.

**PMS** absent. Maxillae with c.10-12 cuspules. Rastellum a broad distinct rounded mound with many short black spines. Thorn spines on femora and patellae III, IV. **FEMALES.** Basifemoral thorns on I, II, IV. Scopula for 1/3-1/5 of metatarsi III, IV, respectively. Prolateral faces of all leg coxae covered with many thorn setae. Preening combs on retroventral metatarsi III (also proventrally). IV. Spermathecae two, each a low mound with short curved inner lobe slightly longer than mound is high. **MALES.** Unknown.

#### ETYMOLOGY

For Mr and Mrs Frank Little and son 'Boy', Mt Molloy, known internationally for their hospitality and knowledge of the fauna and flora of the Mt Molloy region, near Julatten, NEQ.

#### DESCRIPTION

##### HOLOTYPE FEMALE QMS8228

Carapace 9.33 long, 8.27 wide. Abdomen 8.93 long, 5.73 wide. Total length, 21.

**Colour.** Carapace orange brown with light brown band on caput, light brown mottling over rest of carapace except in striae, chelicerae dark red brown, and legs orange brown. Abdomen dorsally pallid with small brown mottling forming slight herring-bone pattern posteriorly; ventrally yellow brown save for very small brown marks on inner edges of posterior book-lungs and one pair medially.

**Carapace.** Pile of short brown bristles and fine silver hairs giving a silver sheen; posterior striae with 4-6 thick black bristles, 14 thick anteromedially flanked by band of short bristles; 2 fine foveal pairs; 3 thick and several fine between PME; 8 thick and 5-7 fine between ALE; 5 thick on clypeal margin. Fovea short, procurved. Striae indistinct, narrow, setose, save for anterior pair.

**Eyes.** Group occupies 0.33 of head-width; front width, back width, length, 64:90:70. Back row straight. MOQ front width, back width, length, 48:67:35. AME:ALE:PME:PLE, 17:21:11:18. Eye interspaces: AME-AME, 0.8; AME-ALE, 1.6; ALE-ALE, 1.6; PME-PLE, 0.2; PME-PME, 2.5; ALE-PLE, 2.6

**Chelicerae.** Stout, long; prodorsally with many long, low, black bristles and silver hairs; no glabrous lateral band; 3-4 short straight thornlike bristles set on inner cheliceral faces just below



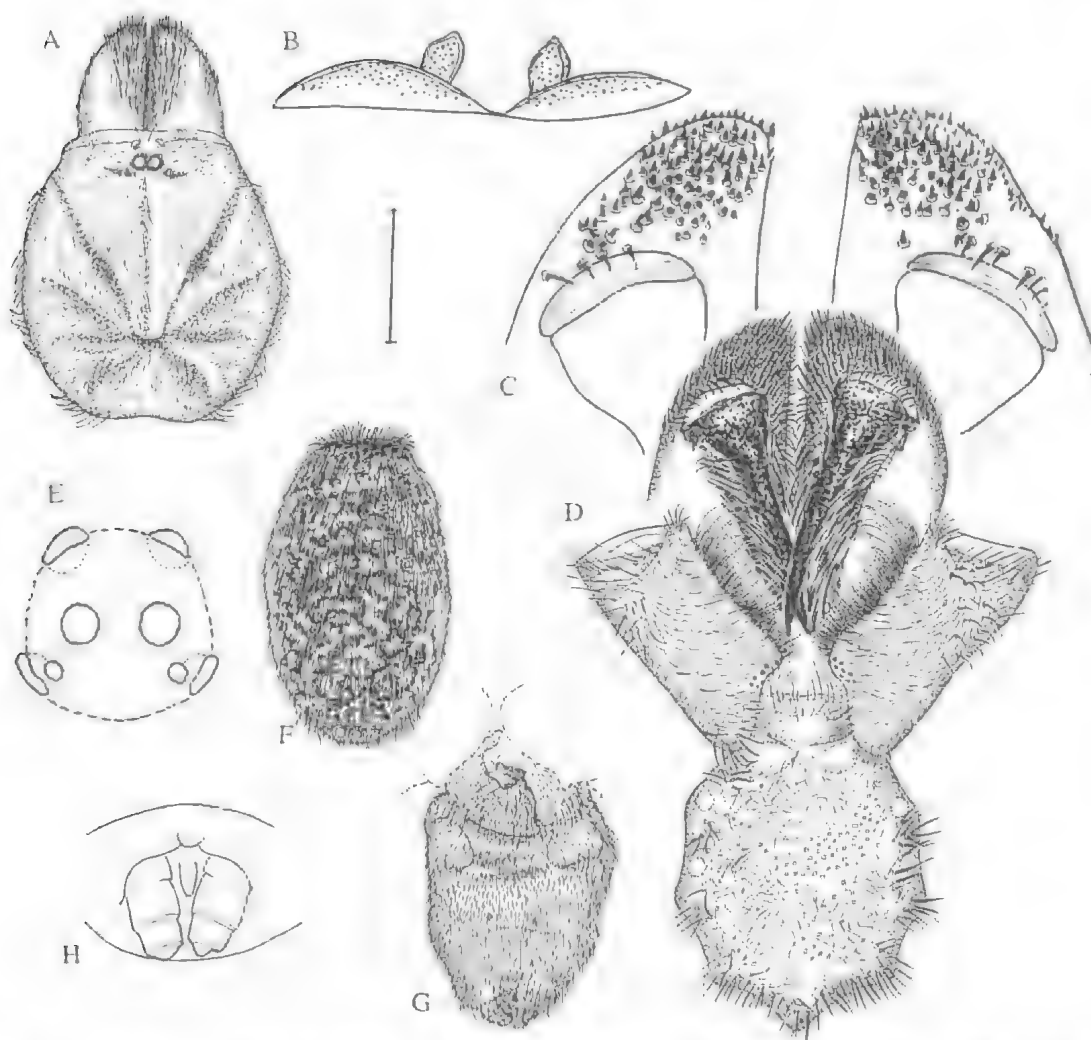


FIG. 93. *Ozicrypta littleorum* sp. nov., holotype ♀ (QMS8228). A, carapace & chelicerae, dorsal view; B, spermathecae; C, apical chelicerae & rastellum; D, sternum, maxillae & labium, ventral view; E, eye group, dorsal view; H, spinnerets, ventral view; F, G, abdomen, dorsal (F), ventral view (G). Scale line = 4mm (A, F, G); 2mm (D); 1mm (C, H); 0.5mm (B, E).

dorsal surface and posterior of point from which prodorsal setae begin; rastellum of broad rounded mound extends well forward of fang joint and covered with many short black spines, some broken. Furrow promargin with 8 large and 2 small spaced teeth, basomesally with 10 small teeth and 30-40 granules. Irregular vertical band of c.15-20 fine pin-like setae on outer faces on lower curvature basally near joint.

**Labium.** 1.60 wide, 0.80 long; c.13 bristles posterior of medial ridge; labiosternal suture a wide shallow groove of two large wide sigilla not medially joined.

**Maxillae.** 2.80 long in front, 4.00 long behind, 1.60 wide; with c.10-12 cuspules along inner edge. Heel distinct, produced; anterior lobe short, distinct; anterior face with group of 5-7 short thorn setae parallel to and just above suture and with many strong, straight setae, setae shorter near labium.

**Sternum.** 4.53 long, 3.93 wide. Sigilla all small, oval, touching margin.

**Legs.** I, II slightly thicker than III, IV. Prolateral faces of all coxae covered with many thorn setae near margins, centrally with light pile of silver hairs; adjacent retrolateral surfaces glabrous save for central transverse band of very short black

thorn setae with long pallid tips. Above suture on prolateral leg coxae with 8-10 strong thorn spines in transverse band. Prolateral edges of coxae and trochanters (from above) with strong spine-like bristles. 4-6 basifemoral thorns prodorsally on I, II, IV. Thorn spines: 6 prodistally and 10-15 dorsally on femora III, IV; 30-40 thinner prolaterally on patellae III, IV, patellae IV also with 20-30 very short hooked thorns. Preening combs: 1 each of 3 strong retroventrally on III, IV; two fine pairs of setae proventrally on III.

	I	II	III	IV	Palp
Femur	7.50	7.17	6.83	8.50	5.76
Patella	5.83	4.50	4.17	4.83	3.36
Tibia	6.50	5.00	3.83	6.67	3.52
Metatarsus	4.67	4.67	5.67	8.67	-
Tarsus	2.50	2.83	2.67	3.00	3.12
Total	27.00	24.17	23.17	31.67	15.76

*Scopula*. Metatarsi: I, II, full, dense, entire; III, two narrow triangles in distal 1/3; IV, same but in distal 1/5. Tarsi: I, II, full, dense, divided by one line of very fine setae; III, full, dense, divided by narrow setal band 6-8 wide; IV, same but setal band 8-10 wide.

*Spines*. I: fe p1, d3, pa 0, ti p1, v1, me v1. II: fe p1, d1, pa 0, ti p2, v3, me v2. III: fe p1, d1, r3, pa p1, ti p2, d1, r2, v9, me p4, d3, r3, v9. IV: fe d1, r2, pa p1, v1, ti p2, r2, v9, me p5, d4, r7, v10. Palp: fe p1, d3, pa 0, ti p1, v7.

*Claws*. All leg claws of similar size, with 3 (IV) or 4 (I) teeth; palpal claw slightly smaller than tufts, bare.

*Trichobothria*. Two rows, each of c. 12 for full length of tibiae; c. 11 in curved row on metatarsi; no clavate, c. 20 filiform on tarsi.

*Spermathecae*. Two, each a low mound with short curved inner lobe slightly longer than mound is high.

*Spinnerets*. PMS absent. PLS length of basal, middle, apical, and total articles 0.79, 0.29, 0.06, 1.14, respectively.

#### DISTRIBUTION, BURROW & HABITAT

Isabella Falls, west of Cooktown to Davies Creek National Park on the Atherton Tableland, Kirwan, western Townsville, and Mt Elliot National Park, NEQ. One ♀ (QMS19114) was taken from the lowland eastern side of Mt Elliot National Park, just south of Townsville. The area was open forest with cycads (*Macrozamia*) and *Xanthorrhoea*. The spider was found after the litter surface was raked then 'shaved' with a knife. The burrow consisted of a Y-shaped tube c. 10 cm deep; a thin door was present on each entrance.

#### ENVENOMATION

One ♀ (QMS17736) bit its collector, Mr Jim Clark, who noted only localised pain for 15-20 minutes.

#### *Oziocrypta mcarthurae* Raven & Churchill, sp. nov.

(Figs 75, 94, Table 6)

#### MATERIAL EXAMINED

TYPE. Holotype ♂, Mt Bauple, via Maryborough, SEQ, 25°47'S 152°34'E, 31 Mar-5 Sep 1977, GSM, QMS8262.

OTHER MATERIAL EXAMINED: 1 juv, as holotype but, QMS17810.

#### DIAGNOSIS

Differs from all other species with distinct posterior median spinnerets in the simple pyriform palpal bulb lacking spiralling vanes.

PMS small, distinct. Maxillae with 8-10 cuspules, Rastellum absent. MALES. Tibia I with short conical distal spur and megaspine; microspur small, triangular, associated megaspine bends at end of microspur; two rows on claws of leg I, one tooth medially on leg IV; palpal bulb pyriform with tapering embolus, apically with 6-8 low keels. Retrolateral face of cymbium straight to convex. FEMALES. Unknown.

#### ETYMOLOGY

For Kathleen McArthur, co-founder of the 'Wildlife Preservation Society of Queensland' (Wright, 1984), noted naturalist, and wildflower painter.

#### DESCRIPTION

##### HOLOTYPE MALE QMS8262

Carapace 5.00 long, 4.08 wide. Abdomen 4.68 long, 2.88 wide. Total length, 11.

*Colour*. Carapace and chelicerae orange brown, legs yellow brown. Abdomen dorsally brown and white with irregular mottling forming no distinct pattern, ventrally pallid, pair of small brown patches beside posterior book-lungs, centrally and near spinnerets.

*Carapace*. Cover of fine silver hairs sparse, denser on margins, uniform cover of short black bristles. Bristles: groups of long criss-cross on lateral margin; 12-15 on anterior margin, bases of c. 8 between ALE, and of 10 between PME; 20-30 anteromedially. Fovea short, slightly procurved. Striae shallow, glabrous, distinct.

*Eyes*. Tubercle distinct. Group occupies 0.35 of head-width; front width, back width, length,

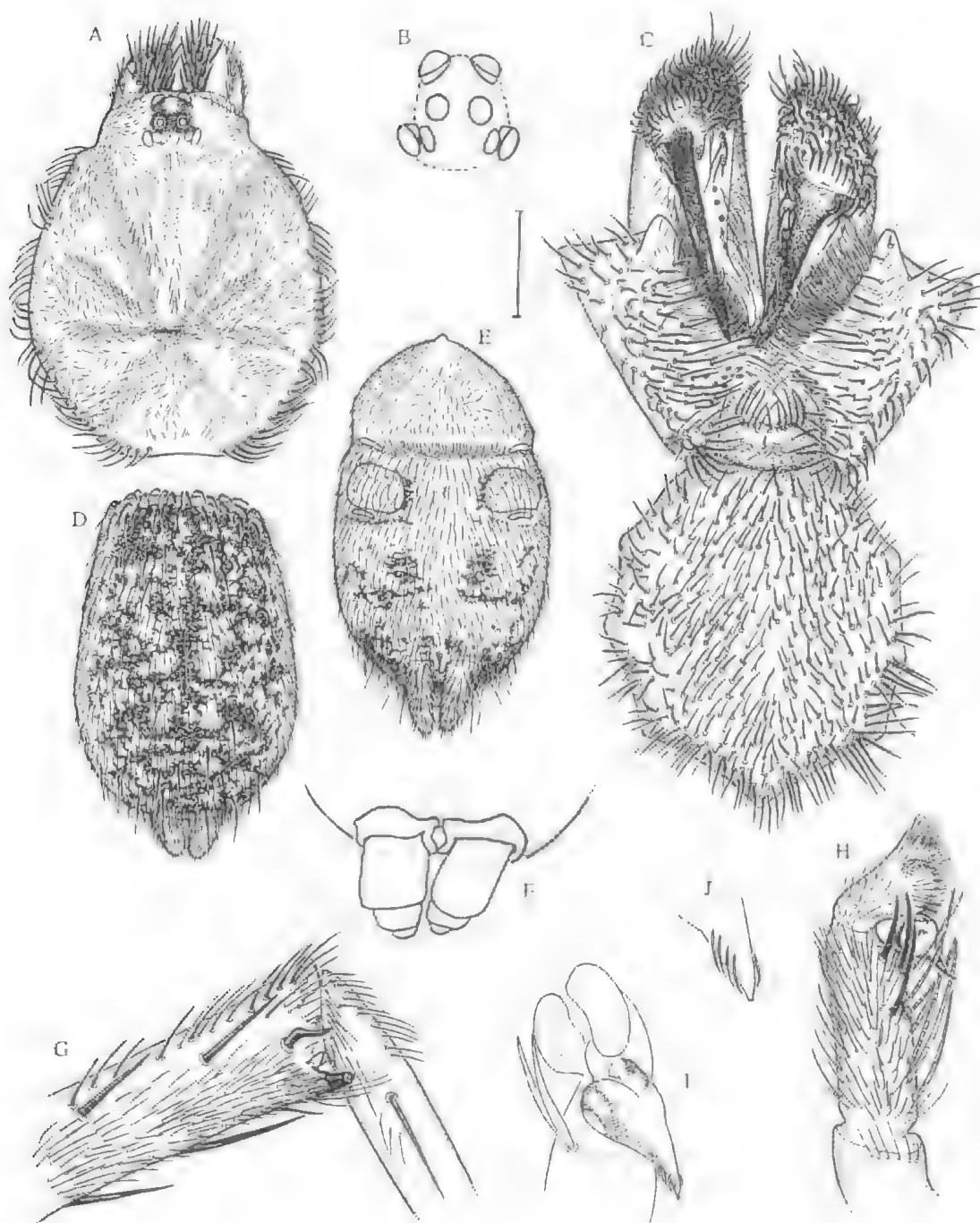


FIG. 94. *Oziercrypta mcarthurae* sp. nov., holotype, ♂ (QMS8262). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, sternum, maxillae & labium, ventral view; D, E, abdomen, dorsal (D), ventral view (E); F, spinnerets, ventral view; G, tibia & metatarsus I, prolateral view; H, cymbium & palpal bulb, prolateral view; I, palpal bulb, ventral view; J, embolus tip. Scale line = 2mm (A, D, E); 1mm (B, C, G, H); 0.5mm (F, I), 0.25mm (J)

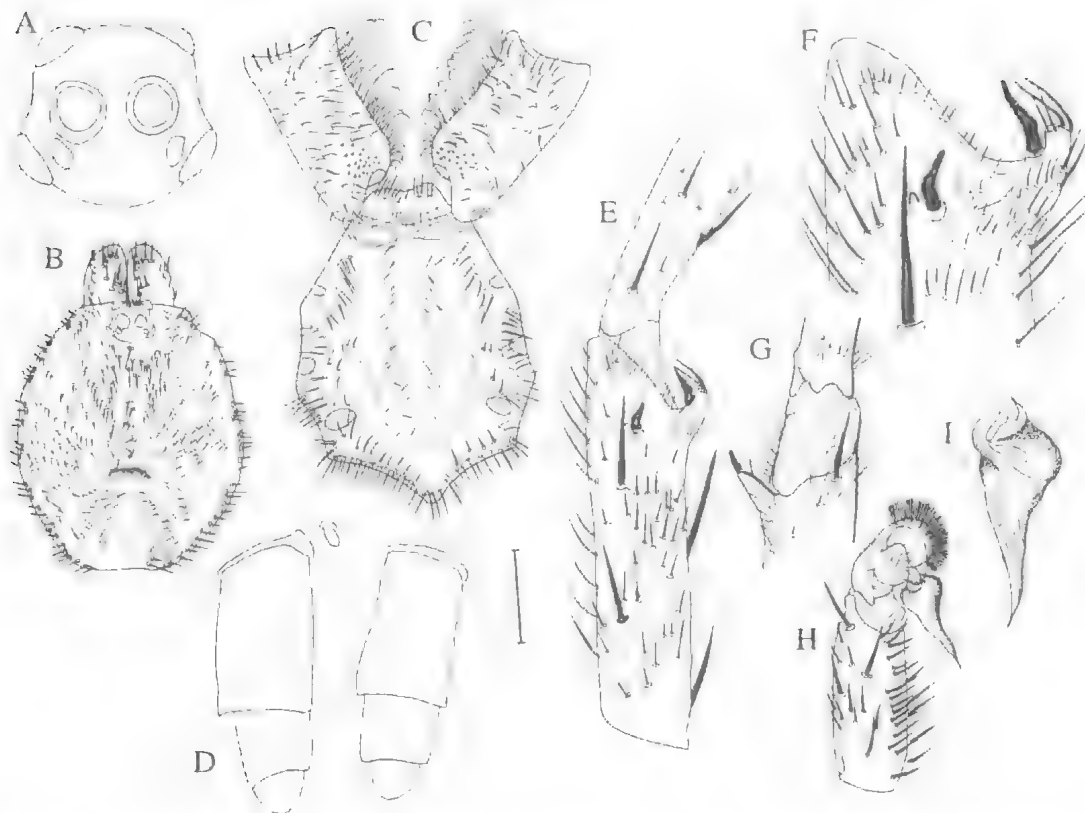


FIG. 95. *Ozicrypta mcdonaldi* sp. nov., holotype ♂ (QMS1608). A, eye group, dorsal view; B, carapace & chelicerae, dorsal view; C, sternum, maxillae & labium, ventral view; D, spinnerets, ventral view; E, G, tibia & metatarsus I, prolateral (E) & retrolateral (G) view; F, tibial spur, prolateral view; H, cymbium & palpal bulb, prolateral view; I, palpal bulb, ventral view. Scale line = 2mm (B); 1mm (C, E, G, H); 0.5mm (A, D, F, I).

27:41:35. Back row slightly recurved. MOQ front width, back width, length, 25:28:20. AME:ALE:PME:PLE, 13:10:8:12. Eye interspaces: AME-AME, 0.2; AME-ALE, 0.5; ALE-ALE, 0.7; PME-PLE, 0.1; PME-PME, 1.3; ALE-ALE 1.4.

**Chelicerae.** Small, rounded with brush of long, brown bristles prodorsally and narrower band laterally. Rastellum is only many long, thick, curved bristles. Furrow promargin with 5 large and 2 smaller teeth, all separated, basomesally with no teeth evident.

**Labium.** 0.84 wide, 0.28 long. Labiosternal suture a shallow groove.

**Maxillae.** 1.24 long in front, 1.68 long behind, 0.76 wide; with c.8-10 cuspules in inner angle. Heel slightly produced; anterior lobe distinct.

**Sternum.** 2.37 long, 2.16 wide. Sigilla all small, oval, marginal.

**Legs.** Tibia I with short conical distal spur and megaspine; microspur small, triangular, associated megaspine bends at end of microspur. Preening combs absent.

**Scopula.** Metatarsi: I, II, in distal 1/2, divided by setae; thin, in distal 1/3 (III) - 1/4 (IV) divided by scattered setae. Tarsi: I -III, full, divided by band 2-3 setae wide; IV, thin, divided by band 4-6 wide.

	I	II	III	IV	Palp
Femur	3.72	3.24	3.12	4.28	2.24
Patella	2.24	1.96	1.68	1.96	1.32
Tibia	2.68	2.32	2.08	3.48	1.32
Metatarsus	2.20	2.12	2.52	4.44	-
Tarsus	1.40	1.44	1.52	2.00	0.80
Total	12.24	11.08	10.92	16.16	5.68

**Spines.** I: fe p1, d4, pa 0, ti p2, v5 + 2 megaspines, me p1, v1, long, basal. II: fe p2, d3 pa 0, ti p2, v6, me p1, v1, long, basal. III: fe p2, d4, r4, pa p2, r1, ti p2, d5, r2, v5, me p4, r4, v7.

IV: fe p1, d5, r2, pa p1, r1, ti p2, d5, r4, v10, me p4, d2, r6, v7. Palp: fe p1, pa 0, ti pv4.

**Claws.** 3 long teeth in each of 2 rows on claws of I, one tooth medially on IV.

**Trichobothria.** Two rows, each of c. 10 on tibiae for full length; c. 16 in curved row on metatarsi; 2 small clavate and c. 15 filiform on tarsi.

**Palp.** Bulb pyriform with tapering embolus, apically with 6-8 low keels. Retrolateral face of cymbium straight to convex.

**Spinnerets.** PMS 0.18 long, 0.06 wide, 0.06 apart, c. 0.15 of basal PLS in diameter. Length of basal, middle, apical, and total articles of PLS, 0.64, 0.30, 0.14, 1.08, respectively.

#### DISTRIBUTION & HABITAT

Mt Bauple, an isolated area of rainforest near Maryborough, SEQ.

**Oziocrypta mcdonaldi** Raven & Churchill, sp. nov.  
(Figs 71, 95, Table 6)

#### MATERIAL EXAMINED

**TYPES.** Holotype ♂, Ambathala, 25°58'S, 145°19'E, SCQ, mulga grassland, 5 May 1979, KRM, QMS1597; paratype ♂, same data, QMS1608.

#### DIAGNOSIS

Males differ from those of *O. mcarthurae* in having a distinct keel along with smaller ridges on the palpal bulb, the much more reduced posterior median spinnerets and the more prolaterally directed and subdistal tibial spur.

PMS present, one only, very minute. 20-22 cusps on maxillae. Rastellum absent. Preening combs on metatarsi IV. **MALES.** Tibia I with straight conical subdistal spur directed proventrally with short subapical straight megaspine; low, short, triangular microspur above moderately short downcurved megaspine. Palpal bulb long, pyriform, keeled, embolus short. Retrolateral face of cymbium straight to convex. Claws with 1-10 teeth in each of two rows on I, IV.

#### ETYMOLOGY

For Mr Keith R. McDonald, spider enthusiast and officer of the Queensland National Parks and Wildlife Service who has donated many valued collections of spiders, including the types.

#### DESCRIPTION

##### HOLOTYPE MALE QMS1597

Carapace 5.60 long, 4.72 wide. Abdomen 4.96 long, 3.28 wide. Total length, 12.

**Colour.** Carapace, chelicerae, and legs yellow-brown; abdomen dorsally yellow with broken black area anteriorly and in five narrow irregular chevrons; ventrally yellow brown.

**Carapace.** Bristles: long brown, especially on caput and margins, and long silver hairs; several long anteromedially; glabrous in striae; many on interstitial ridges, uniformly distributed; fovea short, straight.

**Eyes.** Group occupies 0.31 of headwidth; front width: back width: length, 42:52:41; back row recurved; ratio of AME:ALE:PME:PLE, 16:16:9:15; MOQ front width: back width: length, 24:34:33; ratio of Eye interspaces: AME-AME, 0.3; AME-ALE, 0.6; ALE-ALE, 1.1; PME-PME, 1.5; PME-PLE, 0.2; ALE-PLE, 1.1. Subquadrate tubercle.

**Chelicerae.** Long setae in prodorsal group. Rastellum absent, no mound, few long bristles; fang long, no intercheliceral tumescence. Furrow promargin with 6 teeth, basomesally with 4-6 small teeth.

**Labium.** 1.16 wide, 0.44 long; suture broad, shallow.

**Maxillae.** 1.60 long in front, 2.12 long behind, 0.92 wide; with c. 20-22 blunt, pointed cusps in inner angle. Heel slightly produced; anterior lobe indistinct.

**Sternum.** 3.08 long, 2.52 wide. Sigilla all oval, marginal; posterior 0.22, 0.08; middle 0.16; anterior 0.16.

	I	II	III	IV	Palp
Femur	4.88	5.20	4.64	6.24	2.72
Patella	2.88	2.72	2.16	2.64	1.60
Tibia	4.08	3.52	3.20	4.80	1.96
Metatarsus	4.00	3.60	4.08	5.60	-
Tarsus	2.08	2.32	2.40	2.32	0.84
Total	17.92	17.36	16.48	21.60	7.12

**Legs.** Tibia I with straight conical subdistal spur directed proventrally with short subapical straight megaspine; low, short, triangular microspur above moderately short downcurved megaspine. Thorn spines absent. Preening combs: two weak setae retrolaterally on metatarsi IV; none on metatarsi I-III.

**Scopula.** Metatarsi: I, II, thin, divided in distal half; III, divided in distal third with scattered setae; IV, thin, divided in distal quarter by scattered setae. Tarsi: I, II entire, longer and thin laterally; III, thin, with narrow band of dividing setae; tarsi, IV full, divided by 3-4 setal rows; present on palp.

**Spines.** I: fe p2, d6, pa 0, ti p2, v7 and 2 spur megaspines, me p2, v1. II: fe p2, d5, r3, pa 0, ti p2, v7, me p2, v1. III: fe p5, d5, r3-4, pa p3, r1, ti p4, r4.

v8, me p4, r4, v7. IV: fe p3, d5, r2, pa 0, ti p2, r4, v9, me p4, r5, v9. Palp: fe p1, d2, pa 0, ti p4.

**Claws.** Two rows each of 8-10 teeth on I; either 1 tooth on both faces of claw or 2 on profaces and 3 on retrofaces of IV; claw tufts on palp, dense but cymbium extends beyond tuft.

**Trichobothria.** Two rows, each of 8-10 on distal 3/4 of tibiae; curved row of c.12-15 on metatarsi; c.20 clavate and filiform in irregular divided group on tarsi.

**Palp.** Bulb long, pyriform with 5 shallow distal keels; embolus short; retrolateral face of cymbium straight to convex; cymbial lobes subequal.

**Spinnerets.** Only one very minute PMS, 0.12 long, 0.06 wide; PLS, length of basal, middle, apical, total articles 0.74, 0.42, 0.20, 1.36, respectively.

#### DISTRIBUTION & HABITAT

Mulga woodland with grassland understorey at Ambathala, west northwest of Charleville, in SCQ.

#### REMARKS

A tibial spur set distal of the megaspine is unusual. The paratype lacks an abdomen so the normal condition of the posterior median spinnerets cannot be confirmed.

***Ozicrypta microcauda*** Raven & Churchill,  
sp. nov.

(Figs 10G, 14D, E, 21F, 73-75, 96, 97, Table 6)

#### MATERIAL EXAMINED

**TYPES.** Holotype ♂, Kroombit Crossing, Kroombit Tops, SEQ, 24°22'S 151°01'E, 13-18 Dec 1983, GBM, YTD, JAG, GT, QMS11232; allotype ♀, Kroombit Tops, SEQ, 24°22'S 151°01'E, 22-26 Feb 1982, RR, DY, GBM, GVC, QMS11231; ♀, same locality, 22 Feb 1982-26 Feb 1982, RR, GBM, DY, GVC, TJ, QMS16678; ♀, open forest, 22 Feb 1982, RR, DY, GM, GVC, QMS16679; 2 ♀, Homevale, MEQ, 21°24'S 148°33'E, semi-evergreen vine thicket on basal, 1-7 Apr 1975, VD, RK, QMS8204; ♀, Mt Archer, near Rockhampton, MEQ, 23°21'S 150°35'E, remnant vine thicket, 30 Jun 1982, J. Stanisic, QMS8203; ♀, Mt Archer at saddle, MEQ, 7 Sep 1991, T. Daley, QMS19113; ♀, Bauhinia Ck, west of Rockhampton (trap 4), MEQ, 23°39'S 149°17'E, vine thicket, pitfall trap, 1-6 Apr 1981, GM, RR, QMS8233.

#### DIAGNOSIS

Differs from *O. kroombit*, *O. wallacei* and *O. cooloola* in minute PMS, and also from *O. kroombit* in ♀♀ in the spermathecae being antennotedomed not mushroom-shaped, from *O. cooloola* in lacking the distinct 4 spotted abdominal venter

and from *O. wallacei* also in lacking an apical expansion on outer spermathecal lobe.

PMS minute. 6-13 cuspsules on maxillae. Preening combs strong on III, IV. Rastellum a low mound of short curved bristles. **FEMALES.** Basifemoral thorns small. Spermathecae two, each a low mound with short slender ectal lobe. **MALES.** Palpal bulb pyriform, with one long and 3-4 shorter keels. Retrolateral face of cymbium straight to convex. Tibia I with spur, thick megaspine and 3 fine curved spines below it; prolaterally with triangular microspur and short sigmoid spine; claws with 2-5 teeth in 2 rows.

#### ETYMOLOGY

From the Latin for small tails, alluding to the small posterior median spinnerets compared to those of its sympatric sister species, *O. kroombit*.

#### DESCRIPTION

**HOLOTYPE MALE** QMS11232

Carapace 6.00 long, 5.04 wide. Abdomen 5.68 long, 3.52 wide. Total length, 13.

**Colour.** Carapace, chelicerae, and legs orange brown. Abdomen dorsally dark brown with uniform white mottling; ventrally white with brown mottling, booklung covers dark brown.

**Carapace.** Pile of black bristles; striae glabrous, narrow, indistinct; few silver hairs on caput; many bristles anteromedially; at least 2 pairs of foveal bristles. Lateral margins with short strong black bristles and light pile of silver hair. Fovea short, deep, strongly procurved.

**Eyes.** Group occupies 0.36 of head-width; front width, back width, length, 34:46:41. Back row slightly recurved. MOQ front width, back width, length, 29:29:23. AME:ALE:PME:PLE, 13:13:8:12. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.9; ALE-ALE, 0.9; PME-PLE, 0.6; PME-PME, 1.3; ALE-PLE, 1.5.

**Chelicerae.** Erect small and long black bristles and few silver hairs prodorsally. Rastellum and intercheliceral tumescence absent. Furrow promargin with 7 teeth, no basomesal teeth.

**Labium.** 0.92 wide, 0.44 long. Labiosternal suture is two wide sigilla in wide groove.

**Maxillae.** 1.48 long in front, 2.12 long behind, 0.88 wide; with 7-13 cuspsules in group on inner angle; heel angular, slightly produced; anterior lobe distinct, pointed.

**Sternum.** 3.00 long, 2.60 wide. Sigilla all marginal, oval.

**Legs.** Tibia I with tibial spur capped with thick megaspine and 3 fine curved spines below it, prolaterally with triangular blunt microspur dor-



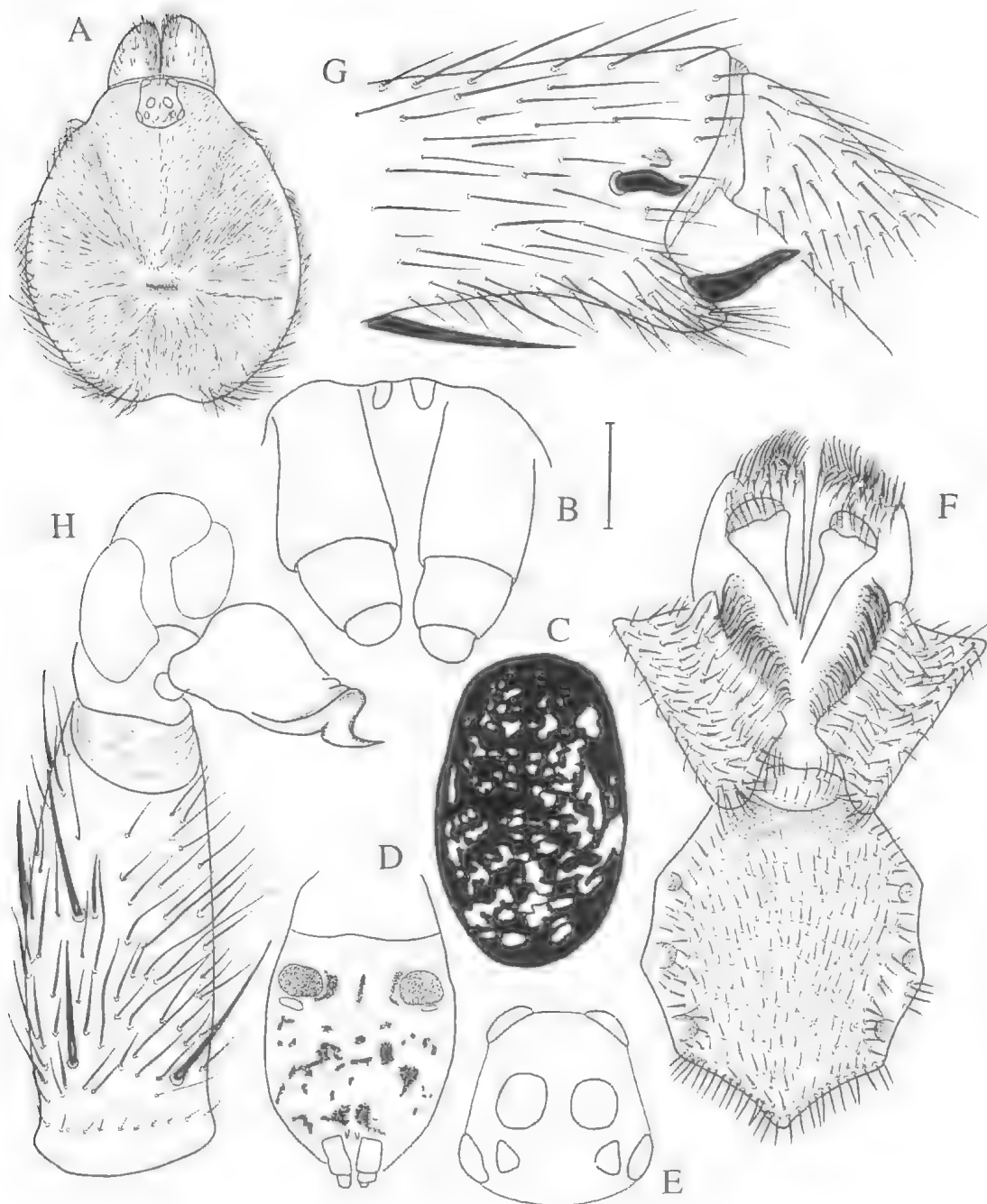


FIG. 96. *Ozicrypta microcauda* sp. nov., holotype ♂ (QMS11232). A, carapace & chelicerae, dorsal view; B, spinnerets, ventral view; C, D, abdomen, dorsal (C), ventral view (D); E, eye group, dorsal view; F, sternum, maxillae & labium, ventral view; G, tibia & metatarsus I, prolateral view; H, cymbium & palpal bulb, prolateral view. Scale line = 4mm (A, C, D); 2mm (F); 1mm (E, G); 0.5mm (B, H).

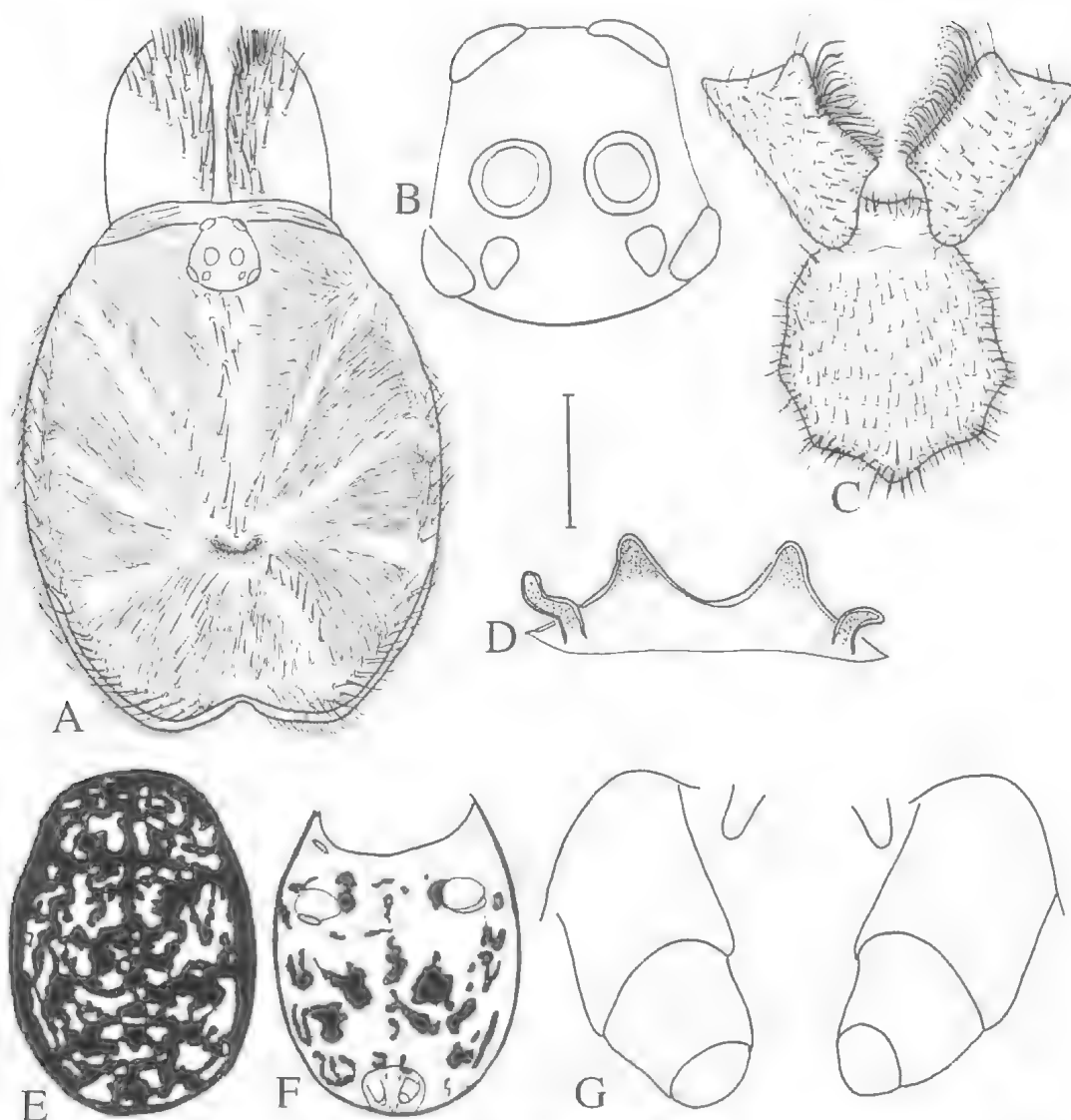


FIG. 97. *Ozicrypta microcauda* sp. nov., allotype ♀ (QMS11231). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, sternum, maxillae & labium, ventral view; D, spermathecae; E, F, abdomen, dorsal view (E), ventral view (F); G, spinnerets, ventral view. Scale line = 2mm (A, C); 4mm (E, F); 0.5mm (B, D, G).

sal to short sigmoid megaspine; ventral tarsi I-IV pallid without 'cracks'. Thorn spines absent. Preening combs: 1 of 3 retrolateral on III.

**Scopula.** Metatarsi: I, II, entire, in distal half; III, divided, distal 1/3; IV, 2 narrow bands in distal 1/4. Tarsi: I, II, entire, full; III, divided by 2-3 rows setae; IV, divided 3-4 rows long setae.

**Spines.** I: fe p1, d6, r2, pa 0, ti p2 + megaspine, v5+ megaspine, me p1, v1. II: fe p2, d5, pa 0, ti p3, v6, me p1, v3; leg 3, fe p4, d5, r3, pa p3, r2, ti

p3, d4, r3 v9, me p5, r4, v9; leg 4, fe p1, d5, r2, pa p2, r2, ti p2, d5, r5, v10, me p6, d2, r6, v11; palp, fe p1, d5, r1, pa 0, ti p4, v3.

	I	II	III	IV	Palp
Femur	5.17	4.58	4.08	5.92	2.83
Patella	2.83	2.75	2.33	2.83	1.75
Tibia	3.58	3.17	2.75	4.58	2.00
Metatarsus	3.17	2.92	3.58	5.83	-
Tarsus	1.75	1.92	1.75	2.17	1.25
Total	16.50	15.34	14.49	21.33	7.83

**Claws.** Two rows of teeth, 5 in outer, 4 in inner rows of leg I; 4 on prolateral faces, 2 on retrolateral faces of leg IV; all claws extend above tufts and similar in size.

**Trichobothria.** Two rows, each of c. 10 for full length of tibiae; curved row of c. 10 on metatarsi; c. 13-15 on tarsi in 2 irregular rows.

**Palp.** Bulb pyriform tapering quickly to short distal tegulum with one long spiralling keel and 3-4 shorter smaller lower keels. Retrolateral face of cymbium straight to convex.

**Spinnerets.** PMS triangular, 0.12 long, 0.09 wide, 0.10 apart, c. 0.18 of width of PLS, basal PLS in diameter. PLS length of basal, middle, apical, and total articles 0.60, 0.32, 0.16, 1.08, respectively.

#### ALLOTYPE FEMALE QMS11231

Carapace 7.67 long, 6.33 wide. Abdomen 10.17 long, 7.50 wide. Total length, 21.

**Colour.** Carapace, chelicerae and legs brown. Abdomen dorsally uniform mottling of brown and white and silvery brown hairs; ventrally mostly pallid with large irregular scattered brown marks.

**Carapace.** Light pile of silver hairs; c. 5 thick black setae beside posterior striae. Bristles: 3 foveal pairs; 5 long in front of AME; 7 long between PME; 10-15 anteromedially; striae glabrous, 15 long black in posterior striae. Fovea short, strongly procurved.

**Eyes.** Tubercle low, edges slope gradually. Group occupies 0.19 of head-width; front width: back width: length, 40:55:49. Back row procurved. MOQ front width, back width, length 34, 34, 27. AME:ALE:PME:PLE, 15:11:9:14. Eye interspaces: AME-AME, 0.4; AME-ALE, 1.0; ALE-PLE, 1.7; PME-PLE, 0.1; PME-PME, 1.3; ALE-ALE, 0.7.

**Chelicerae.** Pilosity: black bristles and silvery brown hairs. Rastellum only a low mound of short strong bristles; no other modifications evident. Promargin with 7 teeth; basomesally with 16 small teeth.

**Labium.** 0.60 long, 1.20 wide; labiosternal suture two separated sigilla.

**Maxillae.** 2.12 long in front, 3.04 long behind, 1.40 wide; c. 8 cuspules; heel broad, produced; anterior lobe distinct.

**Sternum.** 3.52 long, 3.32 wide; all sigilla small, touching margin; inner edge of maxillary heel, and coxae I, II, strongly projecting to form distinct ledge.

**Legs.** 2-3 small basifemoral thorns on I, II, IV. Preening combs: I of 3 strong setae retroventrally on III, IV.

	I	II	III	IV	Palp
Femur	4.58	4.42	3.92	5.83	3.42
Patella	3.50	3.33	2.92	3.08	2.58
Tibia	3.33	3.00	2.42	4.25	2.08
Metatarsus	2.58	2.58	3.08	5.08	-
Tarsus	1.33	1.50	1.92	2.33	1.67
Total	15.32	14.83	14.26	20.57	9.75

**Scopula.** Metatarsi: I, entire, full; II, full, divided by setal band c. 5 setae wide; III, distal 1/3 divided into 2 small triangular bands; IV, in 1/4, 2 very narrow divided bands. Tarsi I: entire, full; II, full, divided by setal band 2-3 rows wide; III, divided by setal band 3-4 rows wide; IV, divided by setal band 4-6 rows wide.

**Spines.** Leg I: fe p1, d2, pa 0, ti p1, v2, me v2; leg II: fe p1, d2, pa 0, ti p2, v5, me p1 v2. Leg III: fe p1, d4w, r2, pa p3, r2, ti p2, r2, v9, me p4, r4, v9. Leg IV: fe d3, r1, pa r1, ti p2, r3, v9, me p5, r6, v10; palp: fe p1, d5, pa 0, ti p1, v7.

**Claws.** 2 (I) or 1 (IV) teeth on outer face; all leg claws of similar size; palpal claw slightly smaller than tufts, bare.

**Trichobothria.** c. 9-11 for full length on tibiae, curved row of c. 21 on metatarsi, 3 basal clavate and 10-15 filiform on tarsi in 2 divided rows.

**Spermathecae.** Two, each a low mound with short slender ectal lobe.

**Spinnerets.** PMS 0.16 long, 0.04 wide, 0.32 apart, c. 0.07 of basal PLS in diameter. PLS, length of basal, middle, apical, and total articles 0.72, 0.36, 0.04, 1.12, respectively.

#### DISTRIBUTION & HABITAT

From Kroombit Tops, SW of Rockhampton, Mt Archer, Rockhampton, and Homevale, west of Mackay. At Kroombit Tops, *O. microcauda*, known only from the open forest, seems to be the ecological sister species of *O. kroombit*, known only from the rainforest. The forest at Homevale is a semi-evergreen vine thicket.

#### SYMPATRIC MYGALOMORPHS

Kroombit Tops, SEQ: *Idiomnata* sp. (Barychelidae); *Hadronyche* sp. (Hexathelidae); *Anane tigrina* Raven (Nemesiidae); *Australothele jamiesoni* Raven (Dipluridae).

Homevale, MEQ: *Namirea eungella* Raven (Dipluridae); *Anane pallida* (Nemesiidae); *Selenocosmia 'crassipes'* (Theraphosidae); *Trit-lame gracilis* Koch (Barychelidae).

Mt Archer, MEQ: *Namirea dougwallacei* Raven (Dipluridae).

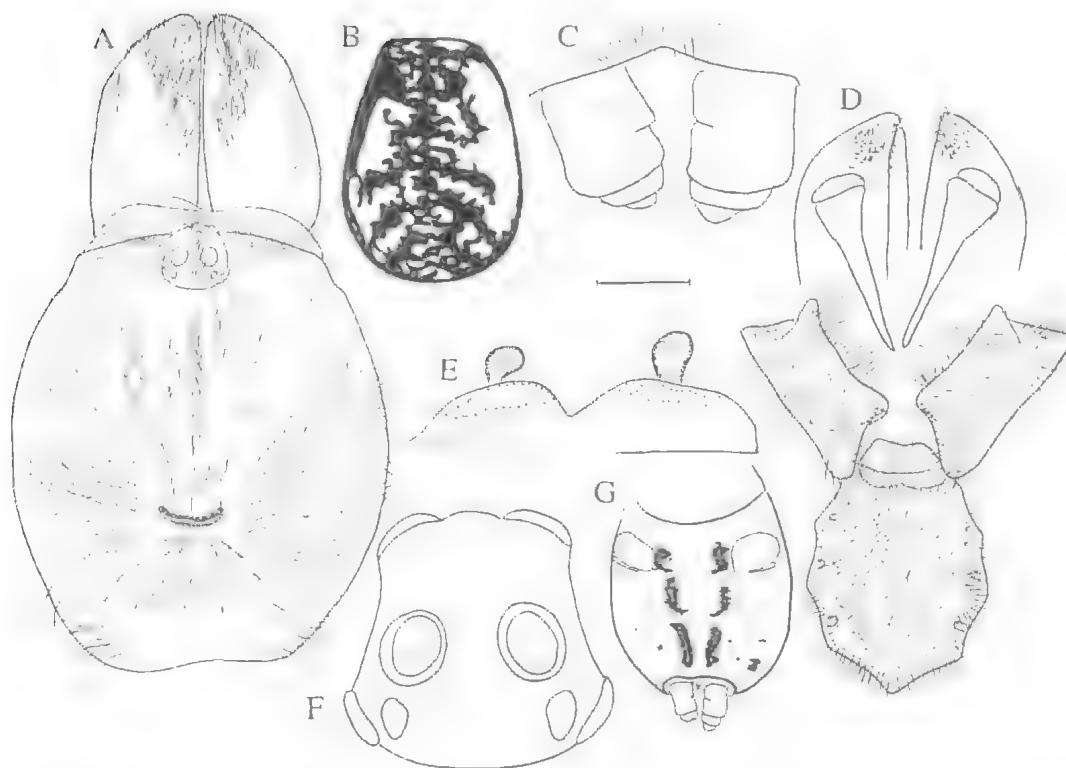


FIG. 98. *Ozicrypta noonamah* sp. nov., holotype ♀ (MAGNT A62). A, carapace & chelicerae, dorsal view; B, G, abdomen, dorsal (B), ventral view (G); C, spinnerets, ventral view; D, sternum, maxillae, labium & chelicerae, ventral view; E, spermathecae; F, eyes, dorsal view. Scale line = 1mm (C); 2mm (A, D); 4mm (B, G); 0.5mm (E, F).

***Ozicrypta noonamah* Raven & Churchill,  
sp. nov.  
(Figs 71, 98, Table 7)**

**MATERIAL EXAMINED**

TYPE. Holotype ♀, Eva Valley Rd, Noonamah, NT, 12°38'S 131°04'E, Aug 1992, I. Morriss, MAGNT A62.

**DIAGNOSIS**

Differs from *O. australoborealis* in that the posterior lateral eyes are longer than the posterior median eyes and the palpal claw is smaller than the tuft.

PMS absent. Rastellum low aspinose mound. Eye group long, wider behind than in front. FEMALES. 7-11 cuspules on maxillae. Maxillary surface noticeably flat. Leg claws: teeth on all; on I about same size on IV, all with short distal hook. Basifemoral thorns on I-III (1-3), IV (10-15). Femora-patellae III, IV prolaterally with strong conical setae. Scopula in distal half of metatarsi III. Preening combs absent. Sper-

mathecae a single broad bilobate mound with slender pyriform apically expanded lobes, arising from ventral face. MALES. Unknown.

**DESCRIPTION**

**HOLOTYPE FEMALE MAGNT A62**

Carapace 9.73 long, 8.40 wide. Abdomen 8.67 long, 5.33 wide. Total length, 25.

**Colour.** Carapace light yellow brown with brown speckling along interstitial ridges, caput dark brown with pallid paired irregular bands lateral of midline, chelicerae dark brown, legs yellow brown, not annulated. Abdomen dorsally brown with large white spots making diffuse brown chevrons posteriorly; laterally quickly becoming entirely pallid; ventrally pallid with distinct brown Vee from inner corners of anterior booklungs to spinnerets.

**Carapace.** Pilosity: hairs absent; uniform cover of short and long black bristles; striae distinct, narrow. Bristles: 2-3 erect black beside posterior striae; 10-15 short thicker anteromedially and many short in band beside caput; 3 long thick and

several finer between PME, and 10 long thick and few finer between ALE; long and short bristles on lateral margins. Fovea deep, distinctly procurved.

**Eyes.** Tubercle distinct. Group occupies 0.24 of head-width; front width, back width, length, 65, 88, 72, respectively. Back row slightly recurved. MOQ front width, back width, length, 61, 65, 38, respectively. AME:ALE:PME:PLE, 22:23:9:23. Eye interspaces: AME-AME, 0.7; AME-ALE, 1.1; ALE-PLE, 1.9; PME-PME, 2.0; PME-PLE, 0.2; ALE-ALE, 1.9.

**Chelicerae.** Band of few long and many short black bristles prodorsally, laterally with 2-3 narrow bands of setae. Rastellum a low mound with 20-30 short strong spine-like bristles. Distinct triangular depression in upper inner angle of chelicerae. Furrow promargin with 9 spaced teeth, basomesally with 4 small teeth and c.10 smaller basally reaching to basal half of furrow.

**Labium.** 0.65 long, 1.35 wide; no broad glabrous areas; uniform cover of slender setae over ventral surface. Labiosternal suture a broad continuous groove.

**Maxillae.** 1.29 long in front, 1.81 long behind, 1.55 wide; lower surface distinctly flat, with 7-11 cuspules in inner angle. Heel angular, produced slightly; anterior lobe distinct.

**Sternum.** 4.52 long, 3.61 wide. Sigilla all small, oval, marginal.

**Legs.** Basifemoral thorns on I-III (1-3), IV (10-15). Femora-patellae III, IV, distally (femora) and prolaterally (femora and patellae) with many strong conical setae. Preening combs absent.

	I	II	III	IV	Palp
Femur	7.07	6.13	5.47	6.93	5.07
Patella	4.67	4.13	3.47	3.87	3.20
Tibia	4.67	3.87	3.33	6.00	3.07
Metatarsus	4.13	3.73	5.20	8.00	-
Tarsus	2.00	2.00	2.53	2.67	2.67
Total	22.54	19.86	20.00	27.47	14.01

**Scopula.** Metatarsi: I, II, full, dense, entire; III, IV, in distal 1/2 (III)- 1/5 (IV), divided. Tarsi: I, II, full, dense, entire; III, IV, dense, divided by setal band 6-15 wide.

**Spines.** I: fe d2, pa 0, ti 0, me 0. II: fe p1, d1, pa 0, ti 0, me 0. III: fe d1, r2, pa p1, ti p2, r2, v7, me p4, r1, v7. IV: fe d1, r2, pa p1, ti p2, r3, v7, me p4, r3, v7. Palp: fe p1, d2, pa 0, ti p1, v3.

**Claws.** All leg claws of similar size and as high as tufts, small, with distal hook short; 1 (IV)-3 (I) short teeth medially; claw tufts about as high as diameter of distal tarsi; palpal claw at most c.half height of tufts, bare.

**Trichobothria.** Two rows, each of c.15 for length of tibiae; c.14 on metatarsi in strongly curved row; c.10 filiform on tarsi, none clavate.

**Spermathecae.** A single broad mound with slender pyriform apically expanded lobes, arising from ventral face.

**Spinnerets.** PMS entirely absent. Basal, middle, apical, total segments of PLS, 1.45, 0.53, 0.10, 2.08 long, respectively.

#### DISTRIBUTION

Eva Valley Rd, Noonamah, NT.

#### REMARKS

The inclusion of *O. noonamah* in *Ozicrypta* is challenged because it is the only species with the much shorter palpal claw, as in *Synothela* in which it may be better placed. However, unlike most *Synothela*, it has similarly sized claws on all legs.

***Ozicrypta palmarum*** (Hogg, 1896) n. comb.  
(Figs 71, 99, Table 6)

[*Idioctis helva*]: Hogg, 1896, p. 335.

*Idioctis palmarum* Hogg, 1901, p. 242; Simon, 1903, p. 914; Rainbow & Pulleine, 1918, p. 138; Rainbow, 1911, p. 116; Bonnet, 1957, p. 2286; Main, 1985, p. 39.

*Idiommatia palmarum*: Raven, 1985b, p. 161; Platnick, 1989, pp. 93, 94.

#### MATERIAL EXAMINED

**TYPE.** Lectotype (here designated) ♀, "Palm Creek, Central Australia", NT, 24°04'S 132°40'E, Horn Expedition, MV K0927; 3 ♀, paralectotypes, same data, MV K0928-30; AM KS 3066.

#### DIAGNOSIS

Differs from all other *Ozicrypta* in the short bilobed form of the spermathecae.

PMS minute. Maxillae with 25-35 cuspules. Rastellum is c.20 long strong curved bristles. Preening combs and thorn spines absent. **FEMALES.** Basifemoral thorns absent. Metatarsi III with scopula in distal 1/6, none on IV. Spermathecae two, each Y-shaped with short inner lobe. **MALES.** Unknown.

#### DESCRIPTION

**LECTOTYPE FEMALE** MV K0927

Carapace 3.80 long, 3.24 wide. Abdomen 5.20 long, 2.80 wide. Total length, 10.

**Colour.** Carapace, chelicerae, and legs yellow brown, not annulated. Abdomen dorsally pallid

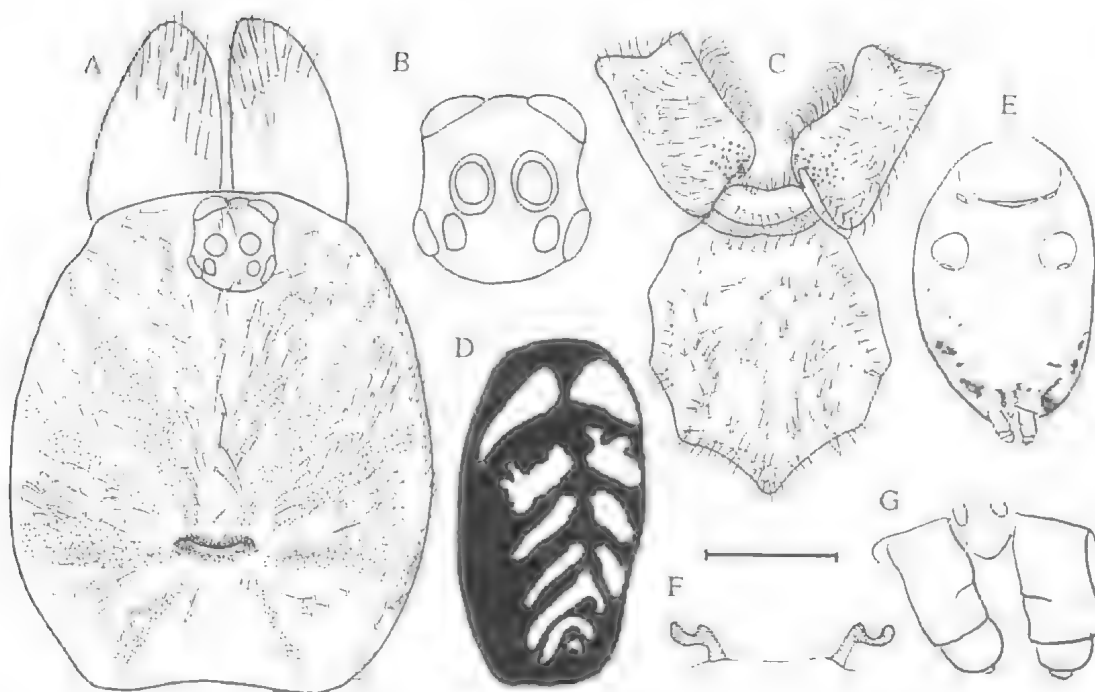


FIG. 99. *Ozicrypta palmarum* (Hogg), syntype ♀ (MV K0927). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, sternum, maxillae, labium & chelicerae, ventral view; D, E, abdomen, dorsal (D), ventral view (E); F, spermathecae; G, spinnerets, ventral view. Scale line = 1mm (A, C); 2mm (D, E); 0.5mm (B, F, G).

with 6 pairs of brown diagonal bands forming herring-bone effect; ventrally pallid.

**Carapace.** Pilosity: light pile of long brown hairs; striae indistinct, narrow. Bristles: no thick setae beside posterior striae; 6 thick erect anteromedially and many long in band beside caput; 3 thick and few finer between PME, and 4 long thick and few finer between ALE; long pallid hairs on lateral margins. Fovea short, deeply procurved.

**Eyes.** Tubercle distinct. Group occupies 0.33 of head-width; front width, back width, length, 24, 23, 25, respectively. MOQ front width, back width, length, 17, 19, 15, respectively. AME:ALE:PME:PLE, 9:10:6:10. Eye interspaces: AME-AME, 0.3; AME-ALE, 0.6; ALE-PLE, 1.1; PME-PME, 1.0; PME-PLE, 0; ALE-ALE, 0.7.

**Chelicerae.** Narrow band of many long and short bristles prodorsally, laterally a narrow band of short setae. Rastellum c.20 long strong curved bristles overhang fang edge, mound absent. Furrow promargin with 7 spaced teeth, basomesally with 6-8 minute teeth for basal 1/3 of furrow.

**Labium.** 0.38 long, 0.80 wide; a narrow glabrous reniform area anteriorly behind which are 6 distinct setae in transverse line. Labiosternal suture a narrow indistinct groove.

**Maxillae.** 1.00 long in front, 1.30 long behind, 0.68 wide; ventral surface flat; with c.28-31 blunt cusplules in inner angle, not on mound. Heel indistinct; anterior lobe small.

**Sternum.** 2.08 long, 1.80 wide. Sigilla all, small, subcircular, marginal.

**Legs.** Basifemoral thorns, preening combs, and thorn spines absent. Tarsi short, slightly incrassate.

	I	II	III	IV	Palp
Femur	2.40	2.08	2.04	2.88	1.80
Patella	1.76	1.60	1.32	1.64	1.20
Tibia	1.68	1.48	1.28	2.40	1.08
Metatarsus	1.20	1.16	1.52	2.44	-
Tarsus	0.80	0.84	1.00	1.28	1.04
Total	7.84	7.16	7.16	10.64	5.12

**Scopula.** Metatarsi: I, II, in distal 2/3 (I)-1/2 (II), sparse, divided; III, two small clusters each of 10-15 hairs in distal 1/6; IV, absent. Tarsi: I, II, sparse, full, divided by narrow setal band 2-4 wide; III, very sparse, divided by wide setal band



6-8 wide; IV, almost absent, widely divided by setal band 6-8 wide.

**Spines.** I: fe p1w, pa 0, ti v2w, me v1w. II: fe p1w, pa 0, ti v2w, me v2. III: fe d2w, r2, pa p2, ti p2, r2, v6w, me p2, r2, v5. IV: fe d3, r1, pa 0, ti r2, v8, me p2, r3, v5. Palp: fe d3w, pa 0, ti v7.

**Claws.** No teeth on claws of I, IV; all as high as tufts; palpal claw slightly smaller than tufts, bare.

**Trichobothria.** Two rows, each of c.7 for 2/3 of tibiae; c.6 on metatarsi in short strongly curved row; c.2 small clavate and c.8 filiform on tarsi in each of two hands.

**Spermathecae.** Two, each Y-shaped with short inner lobe.

**Spinnerets.** PMS minute but evident; 0.05 long, folded heavily on preservation. Basal, middle, apical, total segments of PLS, 0.53, 0.20, 0.10, 0.83 long, respectively.

#### DISTRIBUTION & HABITAT

Palm Creek, NT, an area of riverine gallery forest.

#### REMARKS

Hogg (1896) originally described and figured this Central Australian species as *Idioctis helva*, otherwise known only from Fiji. He later (1901) recanted and newly named *Idioctis palmarum*. Main (1985) listed the types of *I. palmarum* as lost (here found in MV and AM). She also evidently doubted Hogg's (1901) recognition of a barychelid because she placed it as species *incertae sedis* and stated it was 'probably a diplurid' (*sensu* Simon, 1903). In the Museum of Victoria, one of the two most likely museums to find Hogg's material, Raven (1985b) had seen specimens fitting Hogg's description and bearing the type locality label 'Palm Creek, Central Australia' and considered them the types. One ♀ was missing chelicerae. A second similar series was later found in the Australian Museum which included the missing chelicerae.

The inclusion here of *Idioctis palmarum* in *Ozicrypta* may be overturned on the discovery of the ♂ of the species. The species certainly does not belong in *Idioctis* (or the Dipluridae in any sense) but may be better placed in *Mandjelia*.

***Ozicrypta pearni*** Raven & Churchill, sp. nov.  
(Figs 72, 100, Table 7)

#### MATERIAL EXAMINED

**TYPES.** Holotype ♂, Mt Cleveland, SE of Townsville, 19°16'S 147°03'E, NEQ, open forest on summit at 560m, 22-24 Mar 1991, GBM, DC, QMS17847; ♂, same data but Jan-12 Mar 1991, AG, QMS17849; ♂

paratype, same locality and habitat but, pitfall traps, 23 Mar-13 May 1991, DC, QMS19036.

#### DIAGNOSIS

Males differ from those of the sympatric *O. tuckeri* in having a sinuous upper megaspine on tibia I and stouter primary megaspine bent basally, also in having pattern on the abdomen. In *O. tuckeri*, the upper megaspine is straight and the lower one slender and curved like a boomerang.

PMS absent. c.16 cuspules on maxillae. **MALES.** Tibia I prolaterally with small low elongate domed microspur set above angular megaspine 3-4 times its length. Preclinging combs absent. Scopula thin, in distal 1/2-1/3 on metatarsi I, II. Two rows of teeth on claws of all legs, 1-2 teeth per row on IV. Palpal bulb pyriform with short conical pointed embolus; tibia with 10-15 long spine-like bristles basally on ventral surface. **FEMALES.** Unknown.

#### ETYMOLOGY

For Professor John Pearn, Department of Child Health, University of Queensland, in recognition of many past and continuing contributions to child health, medical history, and arachnidism in Australia.

#### DESCRIPTION

**HOLOTYPE MALE** QMS17847

Carapace 3.48 long, 2.68 wide. Abdomen 3.20 long, 2.08 wide. Total length, 7.

**Colour.** Carapace yellow brown with light brown mottling over the surface, chelicerae, and legs yellow brown without bands. Abdomen dorsally pallid with brown reticulate areas anteriorly, medially forms 3 very irregular transverse bars with median band, posterior of that an inverted Vee, and small brown area behind it; ventrally pallid save for small brown area medially.

**Carapace.** Pilosity: light, uniform cover of fine grey hairs and short black setae; striae indistinct, narrow. Bristles: 6 thicker erect black beside posterior striae; c.6 anteromedially and many on caput; one long thick and few finer between PME, and c.6 long thick and few finer between ALE; few long hairs and many long thick curved black bristles on lateral margins. Fovea short, straight.

**Eyes.** Tubercle distinct. Group occupies 0.34 of head-width; front width, back width, length, 18, 23, 23, respectively. Back row straight. MOQ front width, back width, length, 15, 16, 12, respectively. AME:ALE:PME:PLE, 6:7:5:6. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.7;

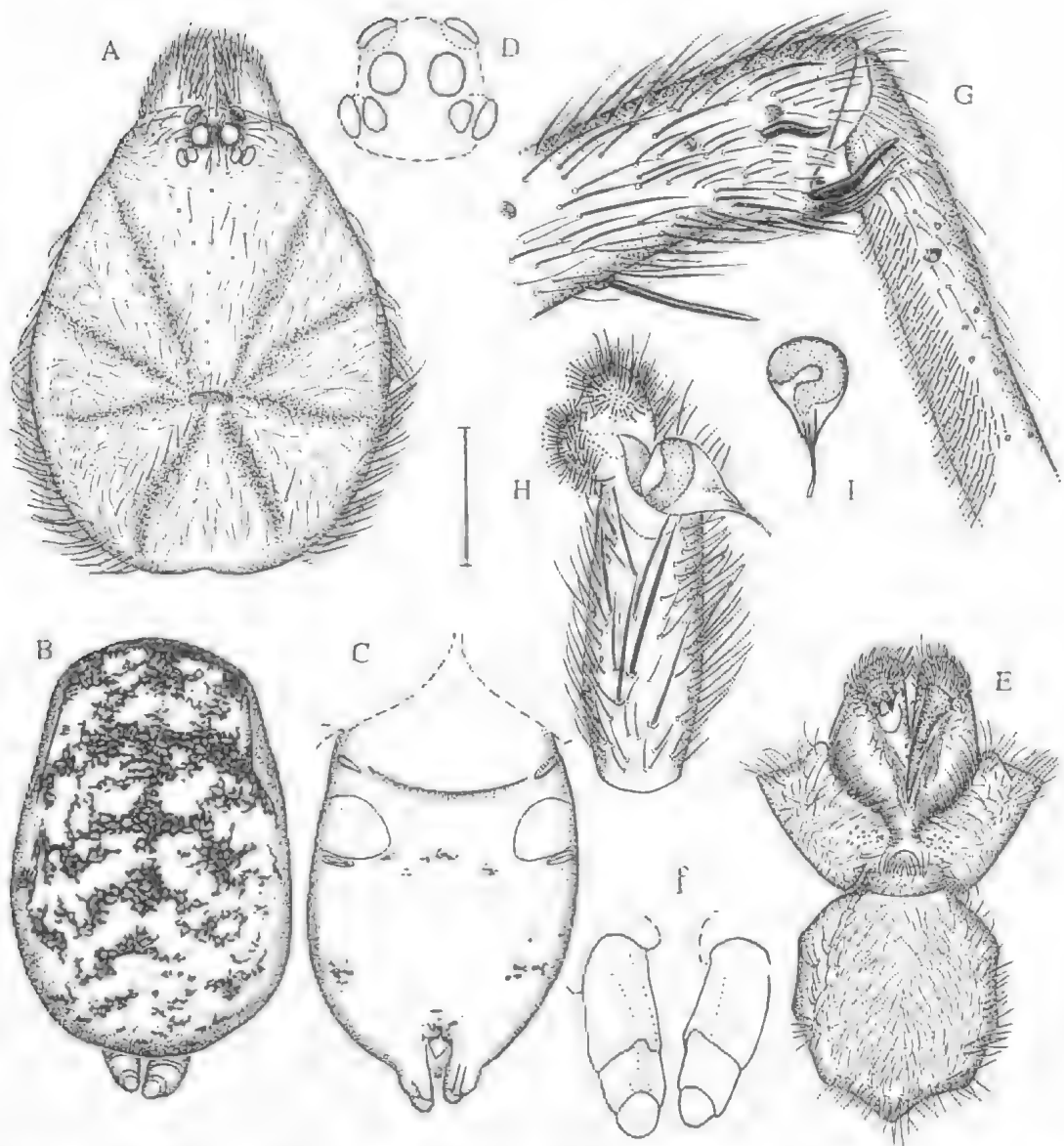


FIG. 100. *Ozicrypta pearni* sp. nov., holotype ♂ (QMS17847). A, carapace & chelicerae, dorsal view; B, C, abdomen, dorsal (B), ventral view (C); D, eye group, dorsal view; E, sternum, maxillae & labium, ventral view; F, spinnerets, ventral view; G, tibia & metatarsus I, prolateral view; H, cymbium & palpal bulb, ventral view; I, palpal bulb, ventral view. Scale line = 1mm (A-C, E); 0.5mm (D, F-I).

ALE-PLE, 1.0; PME-PME, 1.5; PME-PLE, 0.2;  
ALE-ALE, 0.8.

**Chelicerae.** With wide band of long black bristles prodorsally, laterally long silver hairs. Rastellum absent save for 6-8 long curved bristles over fang. Furrow promargin with 6 small spaced teeth, basomesally no granules evident.

**Labium.** 0.20 long, 0.58 wide; short, few setae only medially. Labiosternal suture two wide shallow sigilla joined medially.

**Maxillae.** 0.83 long in front, 1.13 long behind, 0.53 wide, with 15-17 cuspules in inner angle. Heel rounded; anterior lobe indistinct.

**Sternum.** 1.75 long, 1.50 wide. Sigilla all small, oval, marginal

	I	II	III	IV	Palp
Femur	2.80	2.56	2.40	3.32	1.64
Patella	1.68	1.60	1.36	1.40	1.00
Tibia	2.20	2.00	1.72	2.96	0.96
Metatarsus	1.88	1.76	2.16	3.52	-
Tarsus	1.24	1.16	1.12	1.60	0.60
Total	9.80	9.08	8.76	12.80	4.20

**Legs.** Tibia I ventrally with small distal conical spur bearing angular megaspine, prolaterally with small low elongate domed microspur set above angular megaspine 3-4 times its length. Thorn spines and setae absent. Preening combs absent but one long thick and four fine hair-like setae retroventrally on IV. Scopula. Metatarsi: I, II, thin, sparse, in distal 1/2 (I) - 1/3 (II); totally 20 (IV) to 40 (III) hairs in two clusters in distal 1/6. Tarsi: I, II, thin, hairs long, divided by single line of pallid setae; III, thin, divided by setal band 3-4 wide; IV, divided into two bands each narrower than setal band 8-10 wide.

**Spines.** I: fe p1, d5, pa 0, ti p3 + megaspine, v5 + megaspine, me p1, v1 basal. II: fe p1, d4, pa v1, ti p2, v7, me p1, v2. III: fe p2, d4, r1, pa p3, r1, ti p2, r2, v10, me p4, r4, v8. IV: fe d5, r2, pa p1, r1, v1, ti p5, r5, v9, me p6, r5, v6. Palp: fe d5, pa 0, ti p1, v4.

**Claws.** 4-5 teeth in each of two rows on I; 2 in outer, 1 in inner row of teeth on IV.

**Trichobothria.** Two rows, each of c. 8 for length of tibiae; c. 8 in disordered row on metatarsi; c. 4 small clavate and c. 10 filiform on tarsi.

**Palp.** Bulb small pyriform cone with short conical pointed embolus; cymbium retrolaterally straight; tibia with 10-15 long spinelike bristles basally on ventral surface.

**Spinnerets.** PMS absent. Basal, middle, apical, total segments of PLS, 0.38, 0.13, 0.05, 0.56 long, respectively

#### DISTRIBUTION & HABITAT

Open eucalypt forest at the summit (560m) of Mt Cleveland, just south of Townsville, NEQ.

#### REMARKS

This species raises the diversity of barychelids at Mt Cleveland to the highest known in montane areas in Australia.

#### SYMPATRIC MYGALOMORPHS

*Tritrame rainbowi* sp. nov.; *Ozicrypta tuckeri* sp. nov.; *Ozicrypta 'wrightae'* sp. nov.; *Moruga doddi* sp. nov.; and *Mandjelia fleckeri* sp. nov. (Barychelidae); *Conothele* sp. (Ctenizidae); *Misgolas* sp. (Idiopidae); *Phlogiellus* sp., *Selenocosmia* sp. (Theraphosidae)

#### *Ozicrypta reticulata* (Koch, 1874) n. comb. (Figs 73, 101-102, Table 6)

*Idiomma reticulata* Koch, 1874, p. 474, pl. XXXVI, figs 4a, b, 5a, b; Roewer, 1942, p. 215; Bonnet, 1957, p. 2288.

*Encyocrypta reticulata*: Pocock, 1895, p. 225; Hogg, 1901, p. 240; Rainbow, 1911, p. 115; Main, 1985, p. 12.

#### MATERIAL EXAMINED

**Types.** Lectotype (designated by Main, 1985, p. 12): ♂, 'Sydney, New South Wales', type-locality here corrected to Clarke Range, Eungella, near (Port) Mackay), ZMH; ♀ (paralectotype described by Koch in BMHN), Port Mackay, MEQ, was immature. No other material was listed by Koch (1874) as *Idiomma reticulata*. Hence, any material labelled as such as part of the Godeffroy collection and that may have been part of that collection is here explicitly excluded from type status (see Remarks for further notes).

**OTHER MATERIAL EXAMINED.** ♂, Broken River, Eungella National Park, 21°11'S 148°31'E, MEQ, entered office after rain in June 1985, National Parks and Wildlife Service, QMS11245.

#### DIAGNOSIS

Males differ from those of *O. filmeri* in the minute microspur and elongate upper megaspine.

PMS small but distinct. Maxillae with 5-9 (males). Rastellum absent. **MALES.** 2 rows of teeth on claws; tibia I with distal ventral coniform spur with curved spine distal and apically with several long bristles; prolaterally is complementary shared spine and low microspur; metatarsus I slightly bowed with long proximal spine ventrally. Bulb pyriform with thick spiralled keel above which are several transversely spirally ridges proximal of short hooked embolus tip. Cymbium deeply incised; retrolateral face of cymbium concave. **FEMALES.** Unknown.

#### DESCRIPTION

##### LECTOTYPE MALE ZMH

Carapace 5.92 long, 4.80 wide. Abdomen 5.53 long, 3.42 wide. Total length, 15.

**Colour.** Carapace, legs and chelicerae orange brown. Dorsal abdomen brown with reticulate mottling; ventral abdomen white with brown mottling.

**Carapace.** Few short silvery hairs and with uniformly distributed brown bristles over entire surface except striae. Long silver hairs on lateral margins. Bristles: 2 foveal pairs; 5-7 between PME and between AME-ALE space; several anteromedian. Fovea short, procurved with medial posteriorly directed Vee.

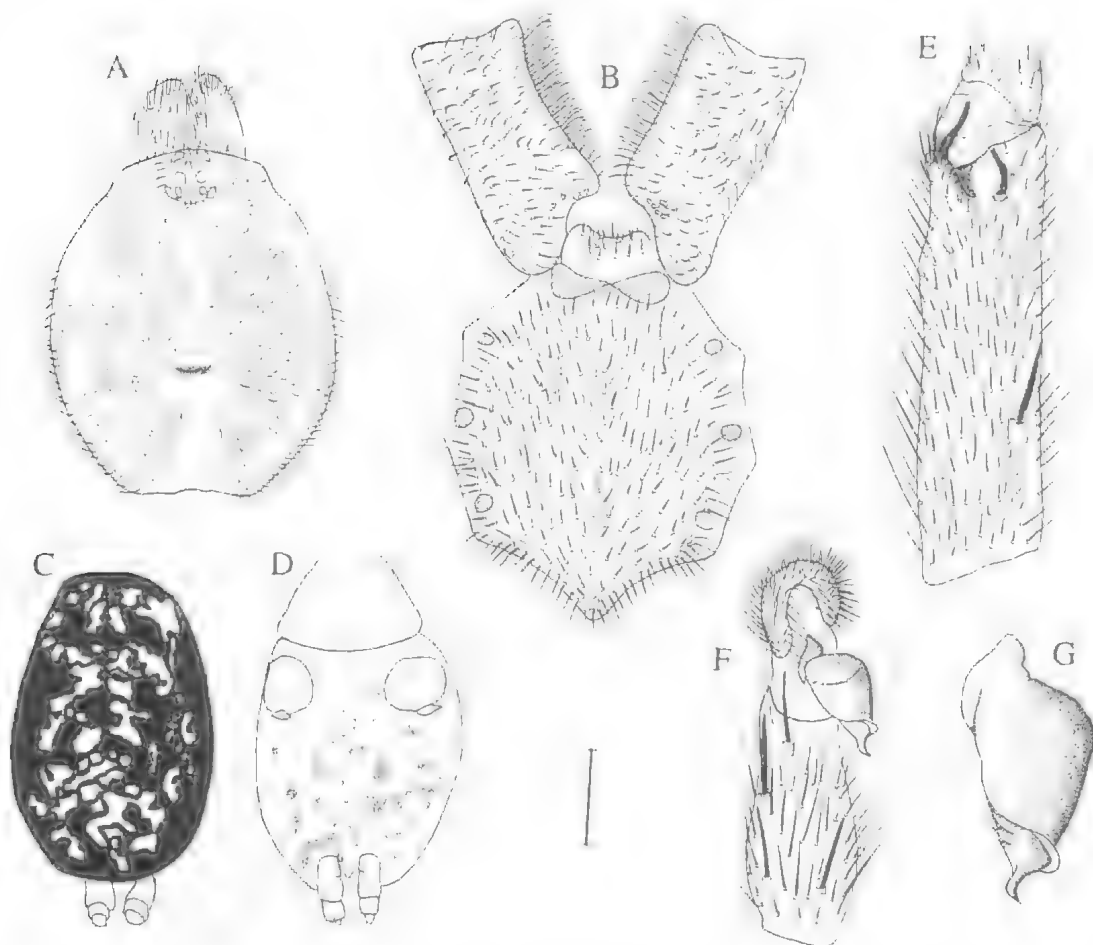


FIG. 101. *Ozicrypta reticulata* (Koch), holotype ♂ ZMH; A, carapace & chelicerae, dorsal view; B, sternum, maxillae & labium, ventral view; C, D, abdomen, dorsal (C), ventral view (D); E, tibial spur, prolateral view; F, cymbium & palpal bulb, ventral view; G, palpal view, ventral view. Scale line = 2mm (A, C, D); 1mm (B, E, F); 0.5mm (G).

**Eyes.** Group occupies 0.31 of headwidth; front width, back width, length, 44:56:53. Back row straight. AME:ALE:PME:PLE, 18:18:10:17; MOQ front width, back width, length, 36:36:30. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.6; ALE-ALE, 1.2; ALE-PLE, 0.7; PME-PLE, 0.1; PME-PME, 1.2.

**Chelicerae.** Long silver hairs and brown bristles. Rastellum absent. Furrow promargin with 10 teeth, basomesally without teeth.

**Labium.** 0.88 wide, 0.41 long.

**Maxillae.** 1.47 long in front, 1.76 long behind, 0.79 wide. With 5-9 cuspules on inner angle. Heel produced posteriorly.

**Sternum.** 2.65 long, 2.35 wide; Separated from labium by two broad sigilloid depressions. All

sigilla small, oval and marginal; length and distance from margin of posterior, 0.18, 0.06; middle, 0.12, 0.03; anterior, 0.09, 0.02.

**Legs.** Tibia I with distal ventral coniform spur distal of which arises a curved spine and apically are several long bristles; prolaterally a complementary shared spine and low locking microspur; metatarsus I slightly bowed with long proximal spine ventrally. Preening combs absent.

	I	II	III	IV	Palp
Femur	4.61	4.21	4.01	5.20	2.63
Patella	2.83	2.63	2.17	2.37	1.78
Tibia	3.36	2.96	2.63	4.01	1.78
Metatarsus	3.03	2.70	3.36	5.13	-
Tarsus	1.71	1.78	1.78	2.11	1.05
Total	15.54	14.28	13.95	18.82	7.24

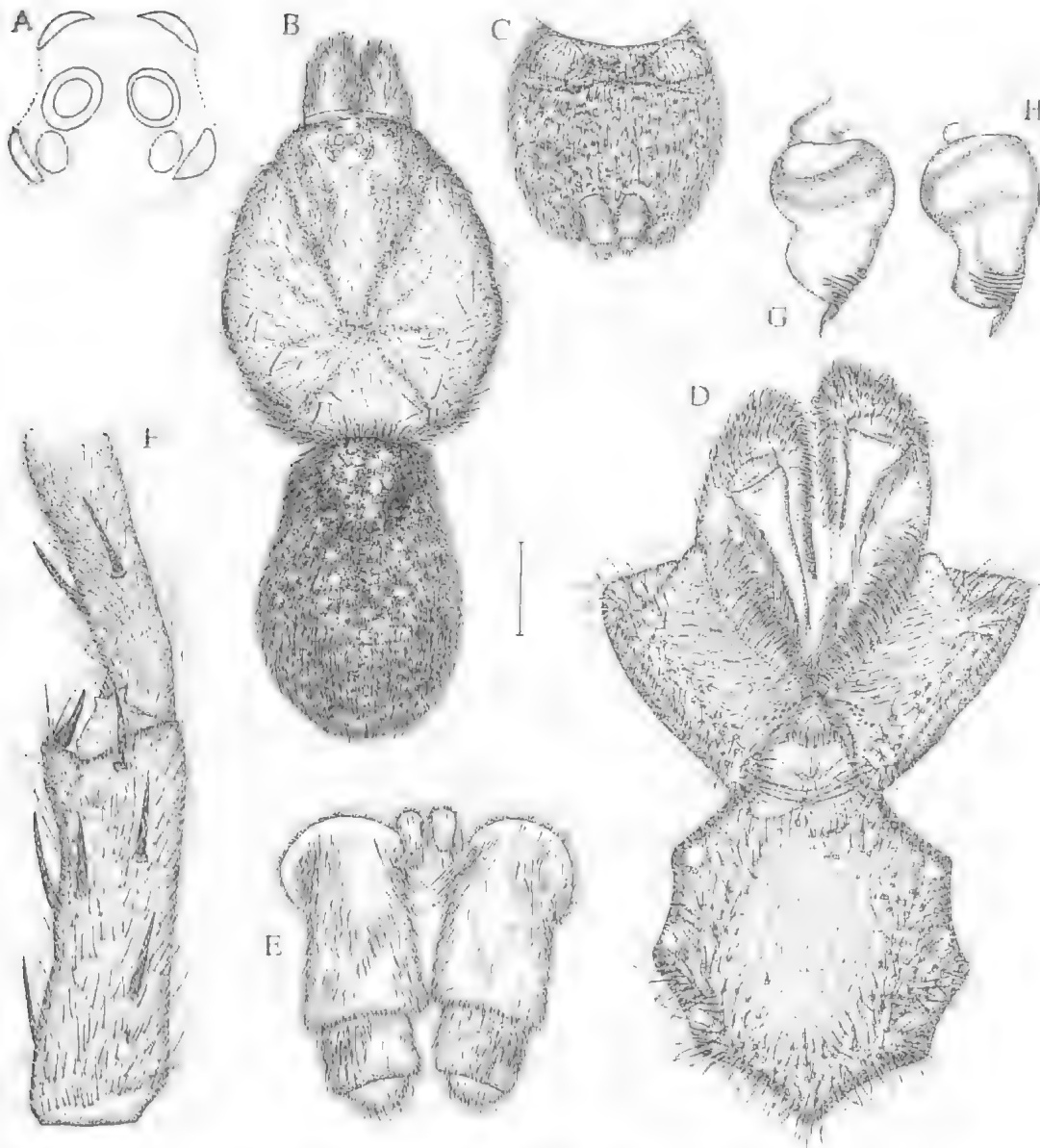


FIG. 102. *Ozcryptareticulata* (Koch), ♂, Broken River QMS112-15; A, eyes, dorsal view; B, carapace, chelicerae & abdomen, dorsal view; C, abdomen, ventral view; D, sternum, maxillae & labium, ventral view; E, spinnerets, ventral view; F, tibia & metatarsus I, prolateral view; G, H, palpal bulb, ventral (G), retrolateral (H) view. Scale line = 2mm (B, C); 1mm (F, D); 0.5mm (A, E, G, H).

**Scopula.** Metatarsi: I, II, in distal 2/3, mixed with few setae; III, in distal 1/4, mixed with setae; IV, almost absent, two small clumps of scopulate hairs. Tarsi: I, II, full, entire, moderately dense, with few setae intermixed; III, IV, divided by narrow, distally widening band of setae, 3-4 wide basally, 8-10 wide distally.

**Spines.** I: fe, p1, d5, r1; pa, 0; ti, p2, v5 + 2 megaspines; me, p1, v1. II: fe, p2, d5; pa, 0; ti, p2, v8; me, p1, v2. III: fe, p3, d5, r3; pa, p2, r2; ti, p2, d5, r2, v10; me, p5, d3, r2, v7. IV: fe, p2, t4, r2; pa, p1, r3; ti, p3, d5, r4, v8; me, p5, d5, r3, v10. Palp: fe, p1, d4, r1; pa, 0; tibia, p2, d5.

**Claws.** Two parallel rows, each of 3 moderately long teeth on I; 2 (inner row) to 4 (outer row) teeth on IV.

**Trichobothria.** Two rows each of c.9-10 on tibiae; c.4 discernible on metatarsi; broad band of filiform and clavate trichobothria on tarsi.

**Spinnerets.** Only 3; sole PMS 0.15 long, 0.05 wide, 0.19 of basal PLS in diameter. Length of basal, middle, apical, and total articles of PLS, 0.73, 0.24, 0.09, 1.06, respectively.

**Palp.** Bulb pyriform with thick spiralled keel above which are several transversely spirally ridges proximal of short hooked embolus tip. Cymbium deeply incised; retrolateral face of cymbium concave.

#### DISTRIBUTION, HABITAT & BURROW

*O. reticulata* is known only from the type-locality, Clarke Range, including Eungella National Park, west of Mackay, MEQ and corrected from the published locality, 'Sydney', New South Wales (see Remarks). A ♀ was taken from Broken River, Eungella National Park, montane rainforest. The ♀ built a soft silk-lined barrel-shaped sac about 4-5 cm long; a door was present at each end of the sac. The burrow was found in frass at the bases of palms (*Archontophoenix*).

#### REMARKS

The identity of this species is confused in the literature. The ♀ described by Koch (1874) was from 'Port Mackay' but immature. The adult ♂ was from 'Sydney, New South Wales'. No barychelids are known from coastal New South Wales south of about Dorrigo in the northeast. *Idiommatata* (s. strict.) does occur in dry western areas of southern NSW but *I. reticulata* as described and drawn by Koch was clearly not a congener of *Idiommatata*. The ♂ lectotype is clearly conspecific with a ♂ (QMS11245) from Broken River, Eungella National Park, just west of Mackay, MEQ; they share all diagnostic characters and differ only in individual variation. Hence, all available data support the notion that the type locality of *Idiommatata reticulata* is the rainforests of the Eungella area, as for *Ixalus* (= *Ixamatus*) *varius* (see Raven, 1980) and no contemporary data falsify it. Hence, the type-locality is redefined to the Clarke Range including Eungella National Park.

To amplify the confusion, adult ♀♀ from 'Bowen' (BMNH, NHMV), Rockhampton (ZMH), and 'New South Wales' (ZMB) have been found bearing Godeffroy Museum labels '*Idiommatata reticulata*' in Koch's handwriting.

'Bowen' was previously found in other groups (see Raven, 1980) to be a broad 'generic' descriptor for material otherwise known only from Eungella National Park. The BMNH material is a jumble of broken legs and other body parts. The NHMV material is in better condition but the setation is not good.

The ZMB material is listed under *Seqocrypta jakara* because they share all discernible diagnostic characters. The locality 'New South Wales' does not conflict with the distribution of the species in SEQ to northern NSW. None of the ♀♀ are unequivocally conspecific with the lectotype. A pitfall trapping program initiated partially to resolve this problem failed to resolve the problem of the Bowen material and yielded only *O. lawlessi* sp. nov. from Bowen. Until a ♀ conspecific with the lectotype ♂ is located, all other specimens from the Godeffroy collection are considered species incertae sedis of doubtful locality. Presumably, the inconsistency between the original published material and that in collections arose through the well known practice of selling parts of a type series.

#### *Oziocrypta sinclairi* Raven & Churchill, sp. nov. (Figs 75, 103, 104, Table 6)

#### MATERIAL EXAMINED

**Types.** Holotype ♂, Deepwater Ck, via Rosedale, 10m, 24°32'S 151°58'E, SEQ, rainforest pitfall, 6 May-24 July, 1975, GSM, QMS17813; ♀ allotype, same data, QMS17814; 2 ♂♂, same locality, GSM, QMS8264; 2 ♂♂, Deepwater Ck via Baffle Ck, SEQ, 6 May-24 Jul 1975, GSM, QMS8256; 2 ♀♀, same data but, 24 Jul 1975-28 Aug 1976, QMS8226.

#### DIAGNOSIS

Females differ from those of *O. filmeri* in having the area behind the posterior booklungs irregularly mottled with no isolated patches. In *O. sinclairi*, two distinct isolated patch areas centrally placed are present. Differs from *O. microcauda* in the much larger spinnerets and that ♂♂ have on the carapace, lateral femora, and dorsal coxae and trochanters a distinct pile of bushy hairs. The abdominal mottling of *O. microcauda* is noticeably finer than in this species.

PMS very small but distinct. Maxillae with 8-20 cuspules in ♂♂ (mean 14), 11-24 in ♀♀ (mean 16). Rastellum absent. FEMALES. Basifemoral thorns few. Scopula for 1/3-1/5 of metatarsi III, IV, respectively. Spermathecae two, each a trianguloid lobe with short straight lateral lobe arising from true dorsal surface.



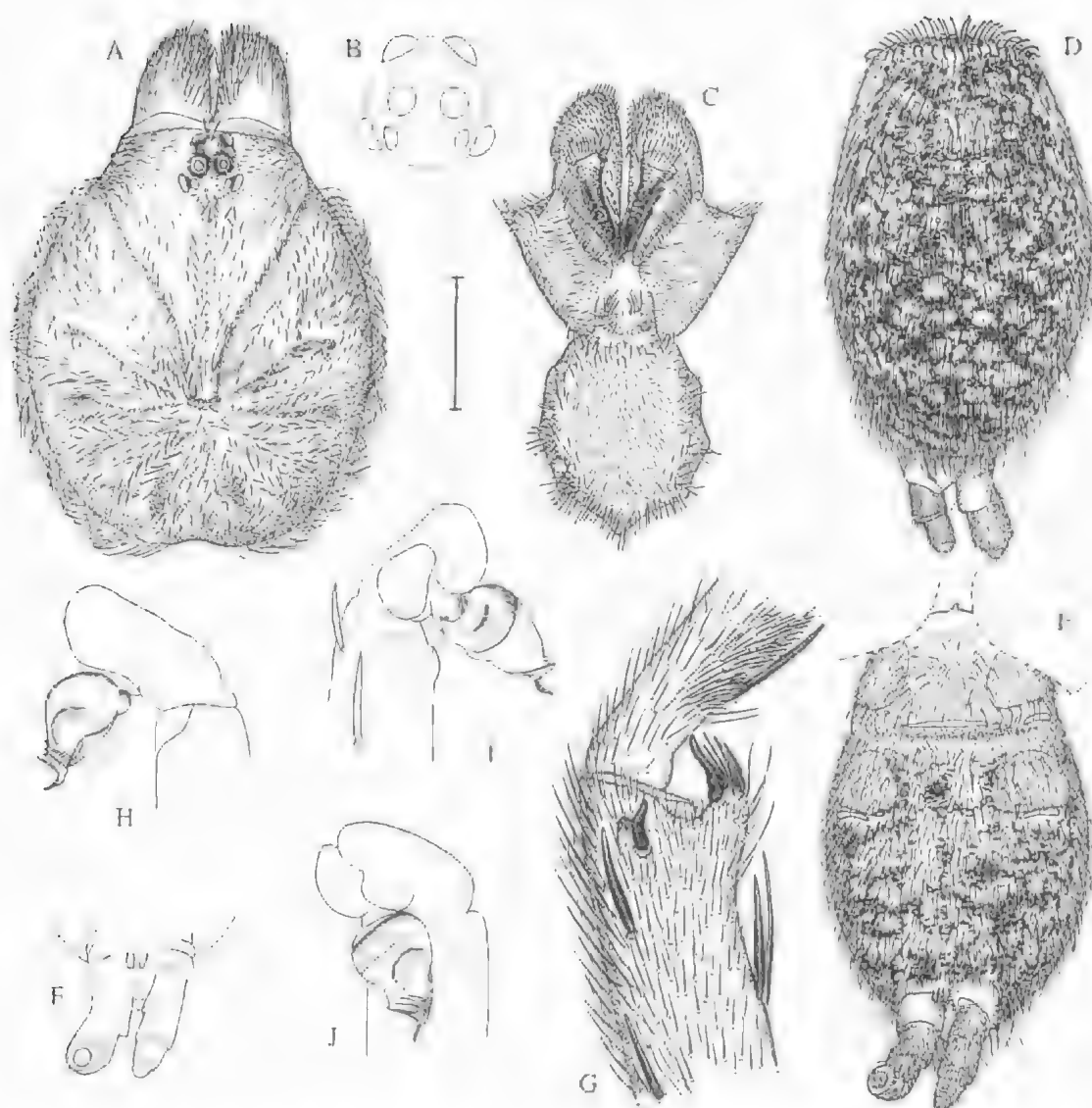


FIG. 103. *Ozicrypta sinclairi* sp. nov., holotype ♂ (QMS8252). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, sternum, maxillae & labium, ventral view; D, E, abdomen, dorsal (D), ventral view (E); F, spinnerets, ventral view; G, tibia & metatarsus I, prolateral view; H-I, palpal bulb, retrolateral (H), prolateral (I) & ventral views (J). Scale line = 3mm (A, C-E); 1.5mm (B, F-J).

**MALES.** Tibia I with distal curved spur bearing stout curved megaspine, short curved megaspine prodorsally set against prodorsal microspur, longer than wide; palpal bulb pyriform, tapered almost uniformly to embolus; single low keel starts from distal 1/3 of bulb and spirals around bulb to tip and is confluent with short straight keel; 6 small ridges form corkscrew effect in distal one fifth above spiralling keel. Retrolateral face of cymbium concave. 2 rows of teeth on claws.

#### ETYMOLOGY

For Mr John Sinclair whose tireless activities helped secure the preservation of vast stretches of virgin rainforests on sand on Fraser Island, SEQ.

#### DESCRIPTION

##### HOLOTYPE MALE QMS17813

Carapace 6.58 long, 5.75 wide. Abdomen 6.75 long, 4.25 wide. Total length, 15.

**Colour.** Carapace and chelicerae orange brown, legs yellow brown (not banded). Ah-

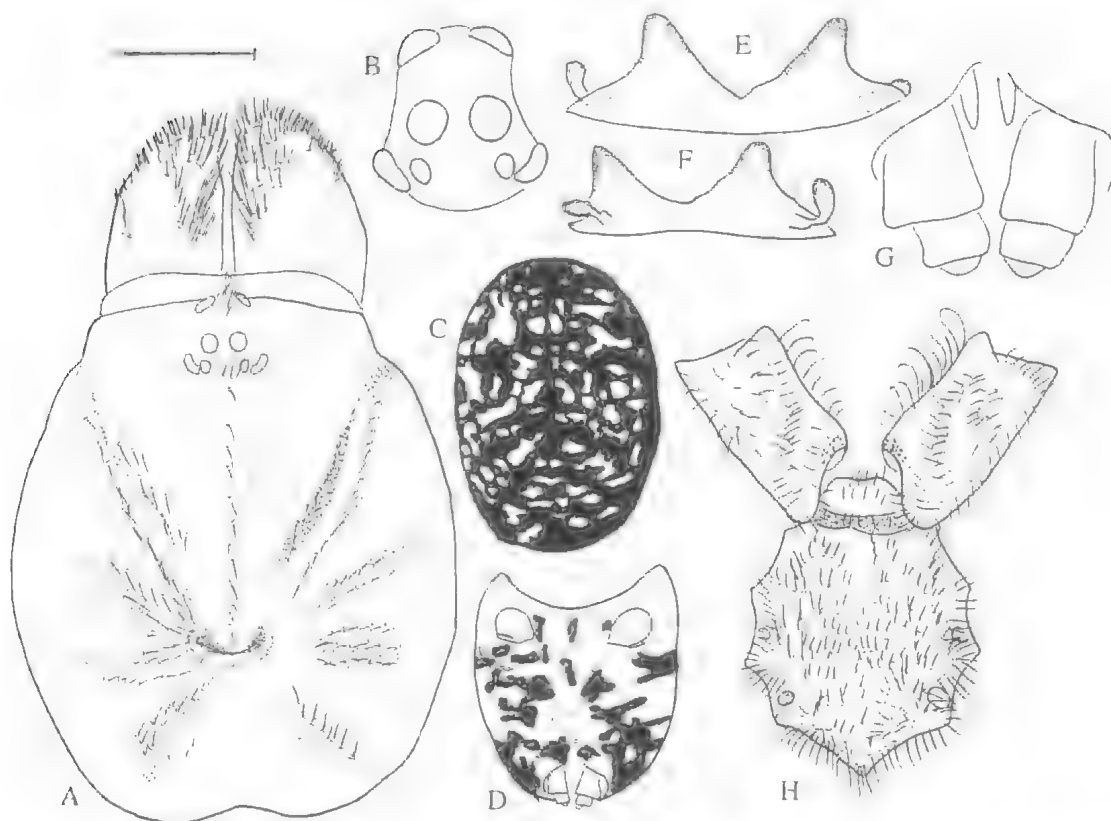


FIG. 104. *Ozicrypta sinclairi* sp. nov., allotype ♀ (QMS17814). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, D, abdomen, dorsal (C), ventral view (D). E, F, spermathecae, dorsal face (E), retrolateral face (F); G, spinnerets, ventral view; H, sternum, maxillae, labium & chelicerae, ventral view. Scale line = 1mm (B, G); 2mm (A, H); 4mm (C, D); 0.5mm (E, F).

domen dorsally brown with moderately large white mottling, not grouped or forming pattern, ventrally with more white, narrow brown band medially and near spinnerets.

**Carapace.** Bristles: pile of short black; very long on posterior margin, along posterior striae, criss-cross along margin and on dorsal coxae and trochanters generally. Bushy fringe of silver hairs on margin (and probably in life on carapace), light pile of silver hairs generally, most noticeable near eyes. Fovea short, straight or slightly procurved. Striae narrow, shallow, distinct.

**Eyes.** Group occupies 0.28 of head-width; front width, back width, length, 37:51:45. Back row procurved. MOQ front width, back width, length, 35:33:26. AME:ALE:PME:PLE, 15:15:9:13. Eye interspaces: AME-AME, 0.3; AME-ALE, 0.7; ALE-ALE, 0.7; PME-PLE, 0.2; PME-PME, 1.5; ALE-PLE, 1.7.

**Chelicerae.** Small; silver hairs and short brown bristles prodorsally. Rastellum absent. Furrow

promargin with 8 small spaced teeth, no teeth evident basomesally.

**Labium.** 1.12 wide, 0.41 long. Labiosternal suture is wide shallow groove including 2 sigilla.

**Maxillae.** 1.95 long in front, 2.66 long behind, 1.04 wide; with 8-9 cuspules in inner edge. Heel produced; anterior lobe distinct.

**Sternum.** 3.25 long, 2.83 wide. Bristles thickest near margin. Sigilla shallow, marginal, indistinct.

	I	II	III	IV	Palp
Femur	5.25	4.67	4.25	5.92	3.00
Patella	3.17	3.00	2.50	2.75	2.04
Tibia	3.92	3.33	3.08	4.75	2.16
Metatarsus	3.33	3.00	3.42	5.83	-
Tarsus	1.83	1.83	2.08	2.42	1.25
Total	17.50	15.83	15.33	21.67	8.45

**Legs.** Lateral femora, dorsal coxae and trochanters with distinct bush of long silver hairs. Tibia I with distal curved spur bearing stout curved megaspine; short, curved megaspine prodorsally set against prodorsal microspur

longer than wide; metatarsi I, II distally incrassate. Thorn spines absent. Preening combs of 3-4 fine grouped setae on retroventral III and IV. Tarsi I-IV ventrally pallid.

**Scopula.** Metatarsi: I, II, for 2/3 entire save for line of setae for proximal half; III, parted widely by two wide setal bands, distal half; IV, parted widely by two wide setal bands, distal 1/3. Tarsi: I, II, full, entire with line of fine setae parting its length; III, full, entire save for band of 2-3 rows of pallid but longer and less erect setae with light red bases; IV, full, entire save for band of 4-5 rows of pallid but longer and less erect setae with light red bases.

**Spines.** I: fe p2, d4, pa 0, ti p2, v4+2 megaspines, me p1, v1. II: fe p2, d4, pa 0, ti p3, v5, me p2, v2. III: fe p3, d5, r4, pa p2, r2, ti p2, d5, r4, v7, me p4, r4, v8. IV: fe p1, d5, r2, pa p1, r2, ti p3, d4, r4, v10, me p4, d5, r7, v11. Palp: fe p1, d4, r1, pa 0, ti p2, v4.

**Claws.** 2 parallel rows each of 3 short teeth (I, IV).

**Trichobothria.** Two rows, each of c.11 for full length of tibiae; c.12 in curved row on metatarsi; c.3 clavate and 10 filiform on tarsi in two bands.

**Palp.** Bulb pyriform, tapering almost uniformly to embolus; single low keel starts from distal 1/3 of bulb and spirals around bulb to tip and is confluent with short straight keel; 6 small ridges form corkscrew effect in distal one fifth above spiralling keel. Retrolateral face of cymbium concave. Tibia ventrally groove for distal half.

**Spinnerets.** PMS very small but distinct, 0.20 long, 0.10 wide, 0.06 apart, c.0.19 of basal PLS in diameter. Basal, middle, apical, and total articles of PLS 1.02, 0.39, 0.25, 1.66 long, respectively

#### ALLOTYPE FEMALE QMS17814

Carapace 7.75 long, 6.67 wide. Abdomen 9.25 long, 6.75 wide. Total length, 19.

**Colour.** Carapace orange brown with darker areas on caput and margins, chelicerae brown, legs yellow brown. Abdomen dorsally brown with many irregular yellow spots in no distinct pattern and c.equal parts brown and yellow; ventrally mainly yellow with many irregular brown marks none especially larger and more distinct than others.

**Carapace.** Uniform cover of short brown setae. Bristles: 4-8 longer thicker in posterior striae, 4-6 strong anteromedially, 6-8 between PME, 4-6 in anterior quadrangle and 4 on clypeal margin; many setae on posterior margin. Striae glabrous, shallow, distinct. Pile of fine brown hairs with

bush of silver hairs along posterior margins. Fovea short, distinctly procurved.

**Eyes.** Group occupies 0.29 of head-width; front width, back width, length, 43:62:58. Back row slightly recurved. MOQ front width, back width, length, 38:36:31. AME:ALE:PME:PLE, 17:19:10:15. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.8; ALE-ALE, 0.7; PME-PLE, 0.1; PME-PME, 1.4; ALE-PLE, 1.9.

**Chelicerae.** Stout, with strong black setae prodorsally and band of shorter setae laterally. Furrow promargin with 7 spaced teeth, basomesally with 3 small teeth.

**Labium.** 1.25 wide, 0.62 long. Labiosternal suture a narrow shallow groove.

**Maxillae.** 2.16 long in front, 3.12 long behind, 1.37 wide; with 18-24 cuspules along inner edge. Heel produced, rounded; anterior lobe distinct.

**Sternum.** 3.75 long, 3.54 wide. Sigilla small, oval, marginal.

	I	II	III	IV	Palp
Femur	5.00	4.50	4.25	5.75	3.92
Patella	3.42	3.58	2.83	3.42	2.58
Tibia	3.67	3.08	3.00	4.75	2.33
Metatarsus	2.67	2.50	2.67	5.08	-
Tarsus	1.75	1.50	1.75	1.92	1.92
Total	16.51	15.16	14.50	20.92	10.75

**Legs.** 2-3 small basifemoral thorns on I, II. Brown bristles and fine cover of brown hairs. Thorn spines absent. Preening combs: 1 of 3 on retroventral III, IV (right leg only).

**Scopula.** Metatarsi: I, II, full length, with line of setae, fine and many on I, and c.10 thick on II, dividing dense scopula; III, 2 sparse triangles in distal 1/3; IV, 2 thin sparse triangles distal 1/5. Tarsi: I, II, with one (leg I) to 3 (leg II) lines of different setae dividing, full, dense; III, 4-6 lines of setae, full, dense; IV, 6-8 lines of setae, full, dense; and both III and IV retro- and proventral.

**Spines.** I: fe p1, d7w, pa 0, ti p1, v5, me 0, v2. II: fe p1, d8w, pa 0, ti p2, v4, me 0, v2. III: fe p1, d3w, r3, pa p3, r1, ti p2, r2, v9, me p4, r4, v10. IV: fe d4w, r1, pa p1, r1, ti p1, r3, v9, me p5, r4, v10. Palp: fe d4w, pa 0, ti p1, v5.

**Claws.** 2 small teeth on claws of I, IV; palpal claw bare, slightly smaller than tufts

**Trichobothria.** Two rows, each of c.10 on tibiae for full length; c.15 in curved row on metatarsi; c.10 very small clavate and 20 filiform on tarsi.

**Spermathecae.** Two, each a trianguloid lobe with short straight lateral lobe arising from true dorsal surface.

**Spinnerets.** PMS 0.35 long, 0.15 wide, 0.15 apart, c.0.24 of basal PLS in diameter. PLS length of basal, middle, apical, and total articles 0.79, 0.35, 0.25, 1.39 respectively.

## DISTRIBUTION &amp; HABITAT

Rainforest at an altitude of 10m from Deepwater Ck, between Bundaberg and Gladstone, SEQ. No other mygalomorphs are yet known from the area.

***Ozicrypta tuckeri* Raven & Churchill, sp. nov.**  
(Figs 72, 105, Table 7)

## MATERIAL EXAMINED

YPES. Holotype ♂, Mt Cleveland, 19°15'14-32'S 147°01'40'-02"E, NEQ, summit, altitude 550m., pitfall traps, Jan-Mar 1991, AG, QMS19049; 2 ♂ paratypes, same data as holotype, QMS19050; 1 paratype ♂, Mt Cleveland, 19°16'S 147°03'E, open forest on summit at 560m, 22-24 Mar 1991, GBM, DC, QMS17842; paratype ♂, same locality, pitfall in 'Blady Grass' area at 500m, 20 Jan-12 Mar 1991, AG, QMS17843.

## ETYMOLOGY

For Mr Perc Tucker, 1919-1980, Member of the Legislative Assembly for Townsville North, 1960-1969, for Townsville West 1969-1974, Deputy Leader of the Opposition 1966-1974, Leader 1974, Mayor of Townsville 1970-1980, who was well known in the Townsville region and highly respected for his many contributions to the community.

## DIAGNOSIS

Differs from all other *Ozicrypta* species known by the black and entirely patternless abdomen. It differs from those species in the shorter posterior median spinnerets and much smaller size and from *Aureocrypta katersi* by lacking basifemoral thorns and most other species in lacking leg scopula. It resembles the New Caledonian

*Encycrypta lugubris* Raven & Churchill in size, abdominal pattern, and eye group shape.

PMS absent. c.18 cuspules on maxillae. MALES. Tibia I with very low distoventral conical spur bearing long curved megaspine; microspur very small with long megaspine set below it. Preening combs present. Scopula entirely absent. Two rows of teeth on all claws, 1-2 teeth per row on IV. Bulb simple short, pyriform, constricting quickly to long slender embolus without keels or ridges. FEMALES. Unknown.

## DESCRIPTION

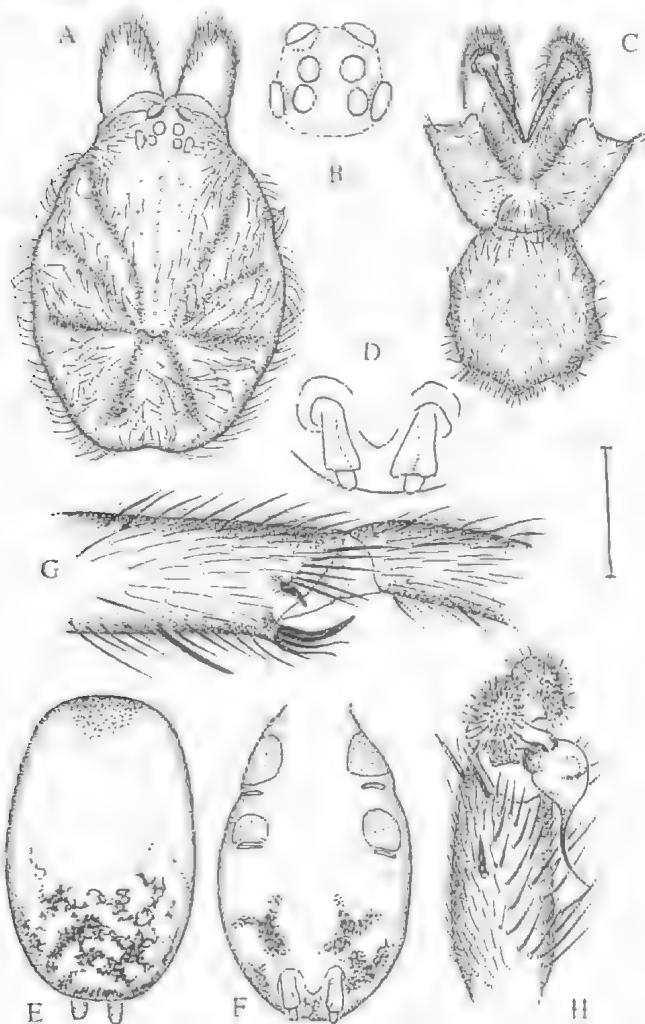
## HOLOTYPE MALE QMS19049

Carapace 2.70 long, 2.03 wide. Abdomen 2.40 long, 1.50 wide. Total length, 5.

**Colour.** Carapace, chelicerae, and legs light yellow brown. Abdomen dorsally light purple with darker areas posteriorly; ventrally pallid purple.

**Carapace.** Pilosity: uniform cover of long, sinuous, erect black bristles.

FIG. 105, *Ozicrypta tuckeri* sp. nov., holotype ♂ (QMS19049). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, sternum, maxillae & labium, ventral view; D, spinnerets, ventral view; E, F, abdomen, dorsal (E), ventral view (F); G, tibia & metatarsus I, prolateral view; H, cymbium & palpal bulb, ventral view. Scale line = 1mm (A, C, E, F); 0.5mm (B, D, G, H).



no hairs evident; striae shallow, wide, indistinct. Bristles: 3-4 long straight black beside posterior striae; 3 anteromedially and 10-15 on each side beside caput; two foveal pairs; 4 long thick between PME, and one long between ALE; 2-3 rows on lateral margins. Fovea short, straight, with two open holes anteriorly on each corner.

**Eyes.** Tubercle distinct. Group occupies 0.39 of head-width; front width, back width, length, 15, 19, 25, respectively. ALE overhang front margin. Back row straight. MOQ front width, back width, length, 11, 12, 9, respectively. AME: ALE: PME:PLE, 5:11:4:6. Eye interspaces: AME-AME, 0.6; AME-ALE, 0.8; ALE-PLE, 1.0; PME-PME, 0.8; PME-PLE, 0.1; ALE-ALE, 0.8.

**Chelicerae.** Short bristles prodorsally, laterally a wide band, Rastellum entirely absent. Furrow promargin with 1 small distal and 6 large spaced teeth, basomesally with 3 small teeth and several granules.

**Labium.** 0.13 long, 0.43 wide. Labiosternal suture two narrow sigilla touching medially.

**Maxillae.** 0.65 long in front, 1.00 long behind, 0.40 wide; with c.16-20 small cuspules in inner angle. Heel broad, rounded; anterior lobe small, distinct.

**Sternum.** 1.38 long, 1.20 wide. Sigilla all very small, indistinct.

**Legs.** Lateral femora covered with long hush of silvery brown hairs. Tibia I with very low distoventral conical spur bearing long curved megaspine; microspur very small with long megaspine set below it. Preening combs: 1 of 3 setae on retroventral III, IV.

	I	II	III	IV	Palp
Femur	1.88	1.72	1.60	2.20	1.24
Patella	1.32	1.08	0.92	1.12	0.76
Tibia	1.48	1.20	1.00	1.88	0.84
Metatarsus	1.12	0.96	1.28	2.20	-
Tarsus	0.72	0.72	0.72	1.00	0.52
Total	6.52	5.68	5.52	8.40	3.36

**Scopula.** No true scopula.

**Spines.** I: fe p1, d4, pa 0, ti p1, v3+ 2 megaspines, me p1, v2 basal. II: fe p1, d3, pa 0, ti p2, v5, me p1, v2. III: fe p1, d2, r1, pa p2, ti p2, r2, v7, me p4, r4, v7. IV: fe d3, r1, pa 0, ti p2, r3, v9, me p4, r4, v7. Palp: fe 0, pa 0, ti p1, v3.

**Claws.** 3-5 teeth in each of two flared rows on wide claws of I; 2-3 teeth in each of two parallel rows on long slender claws of leg IV.

**Trichobothria.** Two rows, each of c.7 long for full length of tibiae; c.12 long on metatarsi in straight; c.2 clavate and c.5 filiform on tarsi.

**Palp.** Bulb simple short, pyriform, tapers quickly to long slender embolus without keels or ridges; cymbium retrolaterally concave.

**Spinnerets.** PMS absent. Basal, middle, apical, total segments of PLS, 0.25, 0.05, 0.03, 0.33 long, respectively.

#### DISTRIBUTION & HABITAT

Mt Cleveland, south of Townsville, NEQ. See *Moruga doddi* for habitat data.

#### MYGALOMORPHS SYMPATRIC

See *Ozicrypta pearni*.

***Ozicrypta walkeri*** Raven & Churchill, sp. nov.  
(Figs 71, 106, Table 6)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Milmerran, 27°53'S 151°16'E, SEQ, 29 Dec 1983, S. & M. Kennedy, QMS8222.

#### DIAGNOSIS

Females differ from those of *O. filmeri* and *O. sinclairi* in that preening combs are on proventral faces of metatarsi III, IV, as well as retroventrally and that patella I is longer than tibia I.

PMS distinct. Maxillae with c.16 cuspules. Rastellum absent. FEMALES. Basifemoral thorns absent. 3 thorn spines on patellae III. Preening combs on proventral and retroventral III, IV. Spermathecae two antennate domes, domes broad low, lateral lobes longer, slender with enlarged apex. MALES. Unknown.

#### ETYMOLOGY

For Mr Pat Walker, (1910-1990) whose knowledge of spiders of the Toowoomba area (and Milmerran) enriched natural history studies.

#### DESCRIPTION

##### HOLOTYPE FEMALE QMS8222

Carapace 7.25 long, 6.06 wide. Abdomen 7.50 long, 5.94 wide. Total length, 17.

**Colour.** Carapace orange brown, chelicerae darker, and legs orange brown, without annulations. Abdomen (damaged) dorsally brown, large white mottling forming irregularly-defined brown chevrons posteriorly; ventrally pallid with brown areas on inner edges of posterior booklung covers and near spinnerets.

**Carapace.** Pilosity: light cover of fine black hairs and brown bristles; striae distinct, narrow, glabrous, margins defined by line of setae. Bristles: few longer black beside posterior striae; 5 long and many short hairs anteromedially and many long in band beside caput; c.7 long thick and several finer between PME, and c.8 long

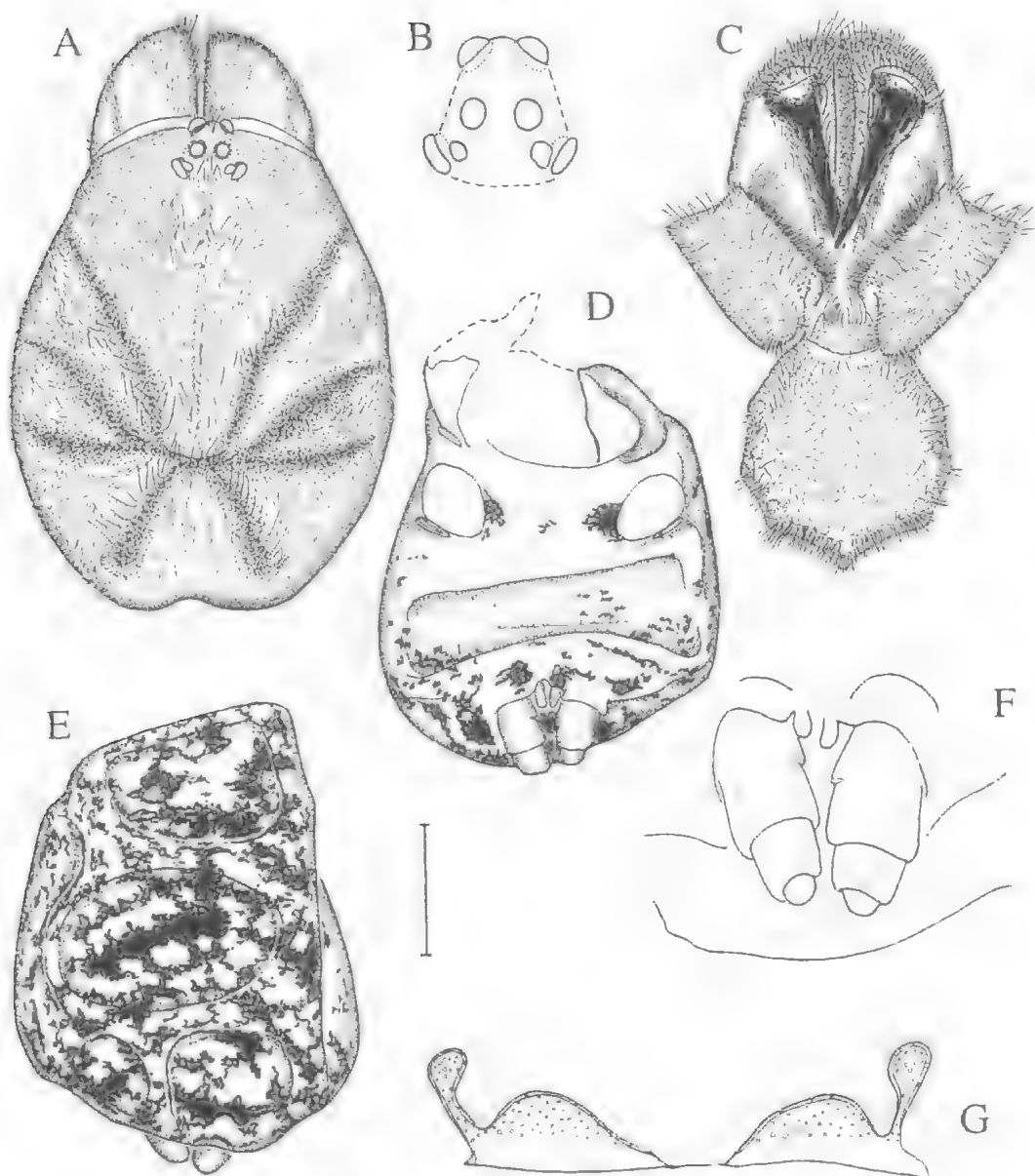


FIG. 106. *Ozieripta walkeri* sp. nov., holotype ♀ (QMS8222). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, sternum, maxillae & labium, ventral view; D, E, abdomen, ventral (D), dorsal view (E); F, spinnerets, ventral view; G, spermathecae. Scale line = 2mm (A, C-E); 1mm (B, F); 0.25mm (G).

thick and few finer between ALE; light pile of short hairs on lateral margins. Fovea wide, distinctly procurved.

*Eyes.* Tubercle distinct. Group long, occupies 0.19 of head-width; front width, back width,

length, 30, 49, 45, respectively. MOQ front width, back width, length, 28, 33, 23, respectively. AME:ALE:PME:PLE, 13:12:8:15. Eye interspaces: AME-AME, 0.5; AME-ALE, 1.0;



ALE-PLE, 1.8; PME-PME, 1.5; PME-PLE, 0.2; ALE-ALE, 0.6.

**Chelicerae.** Wide band of many short and few long bristles prodorsally, laterally glabrous zones broken by narrow bands of short fine setae. Rastellum absent, no mound. many long curved bristles overhang fang. Furrow promargin with 9 large spaced teeth, basomesally with band of 10-12 small teeth.

**Labium.** 0.60 long, 1.24 wide. Labiosternal suture a wide shallow groove including two separate sigilla.

**Maxillae.** 2.20 long in front, 3.20 long behind, 1.44 wide; with 16 cuspules in inner angle. Heel produced, distinct; anterior lobe indistinct.

**Sternum.** 3.76 long, 3.48 wide. Sigilla distinct, all small, less than 10% of sternal width long, oval, marginal.

**Legs.** Basifemoral thorns absent. 3 thorn spines on patella III. Preening combs: 1 of 2 (pro-) to 4 (retro-) setae on each of proventral and retroventral III, IV.

	I	II	III	IV	Palp
Femur	4.56	3.81	3.63	4.63	3.63
Patella	3.44	3.00	2.63	3.00	2.31
Tibia	3.19	2.63	2.31	3.44	2.06
Metatarsus	1.94	2.00	2.63	4.06	-
Tarsus	1.31	1.50	1.63	1.94	1.63
Total	14.44	12.94	12.83	17.07	9.63

**Scopula.** Metatarsi: I, II, distal 2/3 (I)-1/2 (II), divided, thin; III, two triangles in distal 1/3; IV, in distal 1/5, two narrow triangles divided by setal band 3-5 wide. Tarsi: I, II, short, thin, divided by setal band 3-5 wide; III, long, divided by setal band 6-10 wide; IV, divided by setal band 10-15 wide.

**Spines.** Basal femora I-IV with long slender spine. I: fe plw, d3w, pa 0, ti 0, me v1w. II: fe plw, d2w, pa 0, ti p1, v2, me v2. III: fe d1, r1, pa p3, r2, ti p2, r1, v8, me p4, r3, v8. IV: fe d3, r1, pa r1, ti p1, r2, v9, me p4, r4, v9. Palp: fe p1, pa 0, ti v5w.

**Claws.** 1-2 teeth on medial keel on leg I; leg IV claws bare; palpal claw slightly smaller than tufts, bare.

**Trichobothria.** Two rows, each of c.10 for length of tibiae; c.8 on metatarsi in curved row; c.3 clavate and c.15 filiform on tarsi.

**Spermathecae.** Two antennate domes; domes broad, low; lateral lobes longer, slender with enlarged apex.

**Spinnerets.** PMS 0.28 long, 0.10 wide, 0.08 apart, and c.0.15 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 0.95, 0.38, 0.20, 1.53 long, respectively.

#### DISTRIBUTION

Milmeran, SEQ.

**Ozicrypta wallacei** Raven & Churchill, sp. nov.  
(Figs 10D, 11A, 74, 107, Table 6)

*Encycrypta fusca*: Rainbow & Pulleine, 1918, p. 138.

#### MATERIAL EXAMINED

**Types.** Holotype ♀, Farnborough area, near Yeppoon, 23°05'S 150°45'E, Jun 1982, DW, QMS8216. Paratypes: ♀, c.5km N of Yeppoon, near Rockhampton, 23°05'S 150°45'E, vine thicket, 21 Jul 1990, RR, QMS16552; 5 ♀♀, same locality, 11 Nov 1991, RR, PL, QMS19120; ♀, Nob Ck, Byfield, 22°52'S 150°37'E, rainforest, pitfall, 18 Dec 1976-2 Apr 1977, GSM, QMS8231. All in MEQ.

**OTHER MATERIAL EXAMINED.** Juvenile taken with QMS16552; ♀, Eidsvold, 25°22'S 151°07'E, SEQ (listed by Rainbow & Pulleine, 1918 as *Encycrypta fusca*), AM KS 10691; 2 juv., Kemp Beach, 23°10'S 150°48'E, MEQ, 23 Oct 1990-22 Mar 1991, QMS19608.

#### DIAGNOSIS

Differs from *O. hollinsae* and *O. etna* in possessing PMS, and from *O. kroombit* in the 2+2 form of spermathecae, and from *O. microcauda* in the larger PMS and the apical expansion on the outer spermathecal lobe.

PMS reduced, small. Maxillae with 10-18 cuspules. Rastellum a distinct mound with many short thick curved bristles. **FEMALES.** Basifemoral thorns on I, II. Preening combs present. Scopula for 1/2-1/4 on metatarsi III, IV, respectively. Spermathecae two, each a raised triangular mound with outer lateral lobe with apical sphere. **MALES.** Unknown.

#### ETYMOLOGY

A patronym in honour of Mr Doug William Wallace, a valued collector and spider authority of the Rockhampton area and founder of the Rockhampton Arachnological Society whose continued contributions to the knowledge of spiders of that area and to the collections of the Queensland Museum are gratefully received.

#### DESCRIPTION

**HOLOTYPE FEMALE** QMS8216

Carapace 5.20 long, 3.92 wide. Abdomen 6.32 long, 4.32 wide. Total length, 13.

**Colour.** Carapace and legs dark orange brown, chelicerae dark red brown. Abdomen dorsally brown, uniform white mottling in no distinct pat-

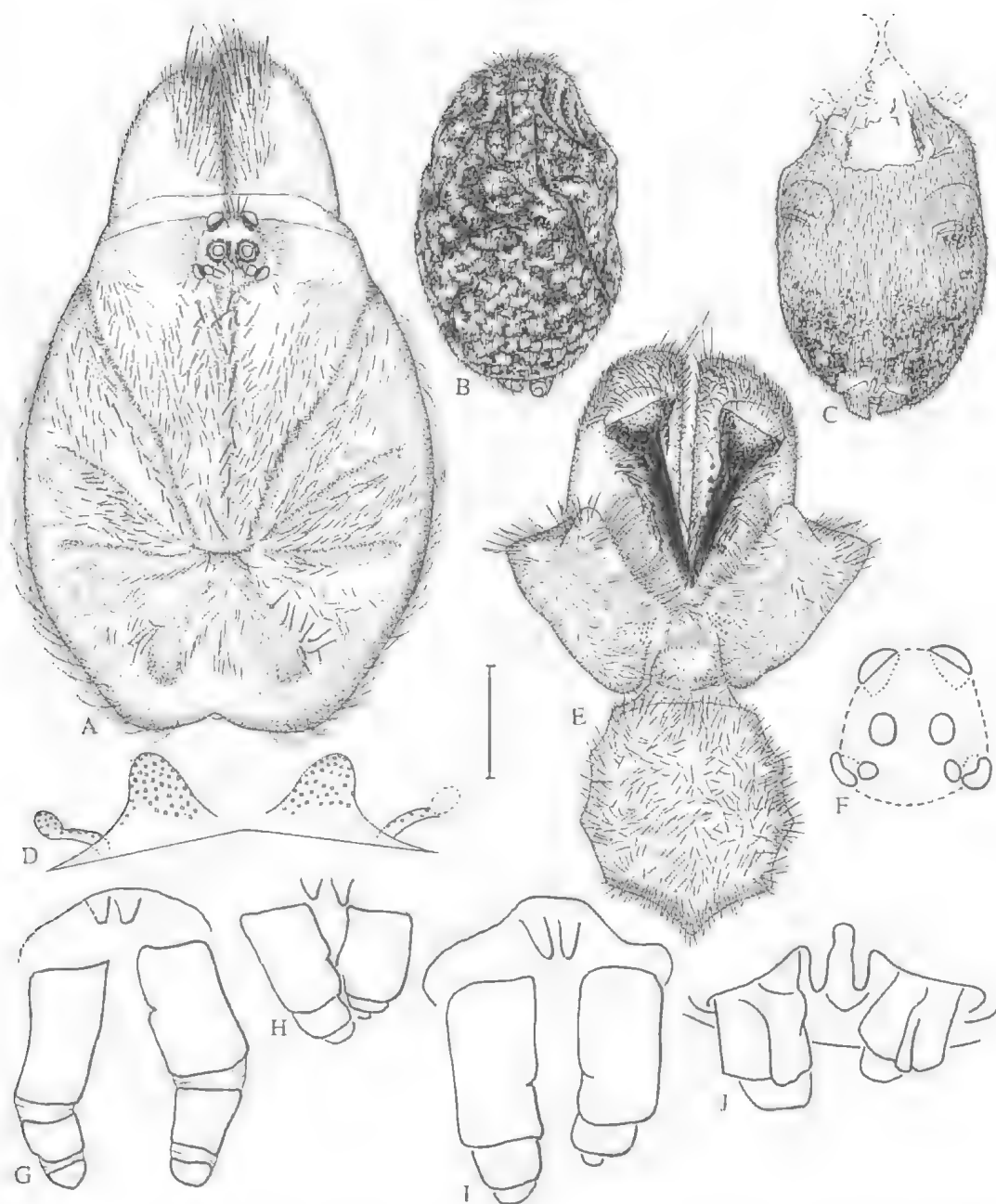


FIG. 107. *Ozicrypta wallacei* sp. nov., ♀ (A-F, J, holotype QMS8216; G-I, QMS19120). A, carapace & chelicerae, dorsal view; B, C, abdomen, dorsal (B), ventral view (C); D, spermathecae; E, sternum, maxillae, labium & chelicerae, ventral view; F, eyes, dorsal view; G-J, spinnerets, ventral view, QMS19120 (3 ♀♀, G-I); holotype (J); K, apical chelicerae with rastellum, ventral view. Scale line = 1mm (G-J); 2mm (A, E); 4mm (B, C); 0.5mm (D, F).

tern; ventrally (under separated setae) mottled brown and white.

*Carapace.* Light pile of silver hairs, more fine black setae, many long brown hairs and bristles

on lateral margins; 10-15 long black bristles flank posterior striae; many shorter, thick black bristles on lower side of anterior-most striae; fine black setae form lines along flanks of other striae; one pair of foveal bristles; 20-25 thick black bristles anteromedially and many thinner shorter black bristles lateral of those; 5 thick and several short between PME, 4 thick and several finer between ALE, c.6 thick on clypeal margin in front of ALE. Fovea short, distinctly procurved; striae narrow, shallow, glabrous.

**Eyes.** Tubercle distinct. Eyes of back row noticeably smaller than those of front. Group occupies 0.33 of head-width; front width, back width, length, 59:77:68. Back row recurved. MOQ front width, back width, length, 47:50:32. AME:ALE:PME:PLE, 15:24:10:11. Eye interspaces: AME-AME, 1.1; AME-ALE, 1.5; ALE-ALE, 1.4; PME-PLE, 0.2; PME-PME, 2.0; ALE-PLE, 2.6

**Chelicerae.** Broad; prodorsally with few long and many shorter finer black bristles, laterally no glabrous strip, fine black setae uniformly spread with group in narrow band. Rastellum a distinct mound with many short thick curved bristles. Furrow promargin with 8 large spaced teeth, basomesally with 10 small teeth and 20-30 raised granules to just less than half length of furrow.

**Labium.** 1.44 wide, 0.88 long; a raised conical mound centrally. Labiosternal suture a wide (medially also) deep groove of two joined sigilla.

**Maxillae.** 2.88 long in front, 4.08 long behind, 1.76 wide; with c.15-17 cuspules in inner angle. Heel broadly produced; anterior lobe distinct.

**Sternum.** 4.72 long, 4.40 wide. Sigilla all small, oval, marginal, save posterior pair subcircular, distinct.

**Legs.** 3-5 basifemoral thorns on I, II; otherwise covered with fine recumbent brown hairs and long and short brown bristles. Thorn spines on patellae and distal femora absent. Preening combs: 1 of 2 (III) to 3 (IV) retroventrally.

	I	II	III	IV	Palp
Femur	6.72	6.00	4.96	7.44	5.04
Patella	4.88	4.00	3.60	3.84	3.04
Tibia	4.00	4.08	3.60	5.44	3.04
Metatarsus	3.44	3.68	4.64	6.64	-
Tarsus	2.00	2.24	2.48	2.88	2.48
Total	21.04	17.76	15.32	26.24	13.60

**Scopula.** Metatarsi: I, II, full, dense, entire save for few scattered setae on II; III, in distal 1/2, moderately dense, divided by 2 lines of bristles; IV, distal 1/4, divided by 3 bands of bristles. Tarsi: I, II, full, dense, divided thinly by setal band 1 wide; III, dense, full, narrowly divided by

setal band 2-3 wide; IV, similar but setal band 4-6 wide.

**Spines.** I: fe p1, d5w, pa 0, ti p2, v2, me v2. II: fe p1, d2w, pa 0, ti p2, v3, me v3. III: fe p3, d1, r3, pa p3, r1, ti p2, r3, v8, me p4, r4, v9. IV: fe d3, r1, pa r1, ti p2, r4, v10, me p5, r6, v12. Palp: fe p1, d4w, pa 0, ti p1, v7.

**Claws.** Two teeth (I), 1-2 (IV); palpal claw bare, slightly smaller than tufts.

**Trichobothria.** Two rows, each of 12 on tibiae for length; c.15 in curved row on metatarsi; c.6 small clavate and 20 long filiform on tarsi.

**Spermathecae.** Two, each a raised triangular mound with outer lateral lobe with apical sphere.

**Spinnerets.** PMS 0.44 long, 0.20 wide, 0.20 apart, c.0.28 of basal PLS in diameter. PLS length of basal, middle, apical, and total articles 1.12, 0.64, 0.24, 2.00, respectively.

#### DISTRIBUTION, HABITAT & BURROW

Small area of vine thicket just north of Yepoon, near Rockhampton and at Byfield, the central coast of Queensland. Several burrows were found in trash at the base of a palm tree. The burrows are thin barrel-shaped cells with two doors. The position of the doors is variable. On burrows that were horizontal the doors were on each end (2-doored cells); on vertical burrows, the two doors are adjacent and set on the upper face. The burrows are typically 3-5cm long and 1-2cm wide at the mid-point. A ♀ was also taken from a burrow attached to the underside of a log. The burrow was also a thin walled, soft 'cell' c.3-4cm long and 2cm wide.

#### REMARKS

The slightly contracted state of the PLS increases the relative size of the PMS in the holotype; in fresh material, the PMS vary from 0.14-0.25 (mean 0.19) of the PLS basal segment in diameter.

#### MYGALOMORPHS SYMPATRIC

*Namea* sp. (Nemesiidae); *Ozicrypta etna*, *Tritatane augusteyni* sp. nov. (Barychelidae); *Arbanitis* sp. (Idiopidae).

***Ozicrypta wrightae*** Raven & Churchill, sp. nov.  
(Figs 72, 108, Table 7)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Bellenden Ker Range, 0.5 km S of Cable Tower No. 7, 500m, NEQ, 17°16'S 145°51'E, 17-24 Oct 1981, collected by Earthwatch Expedition and Qld Museum, QMS9649.

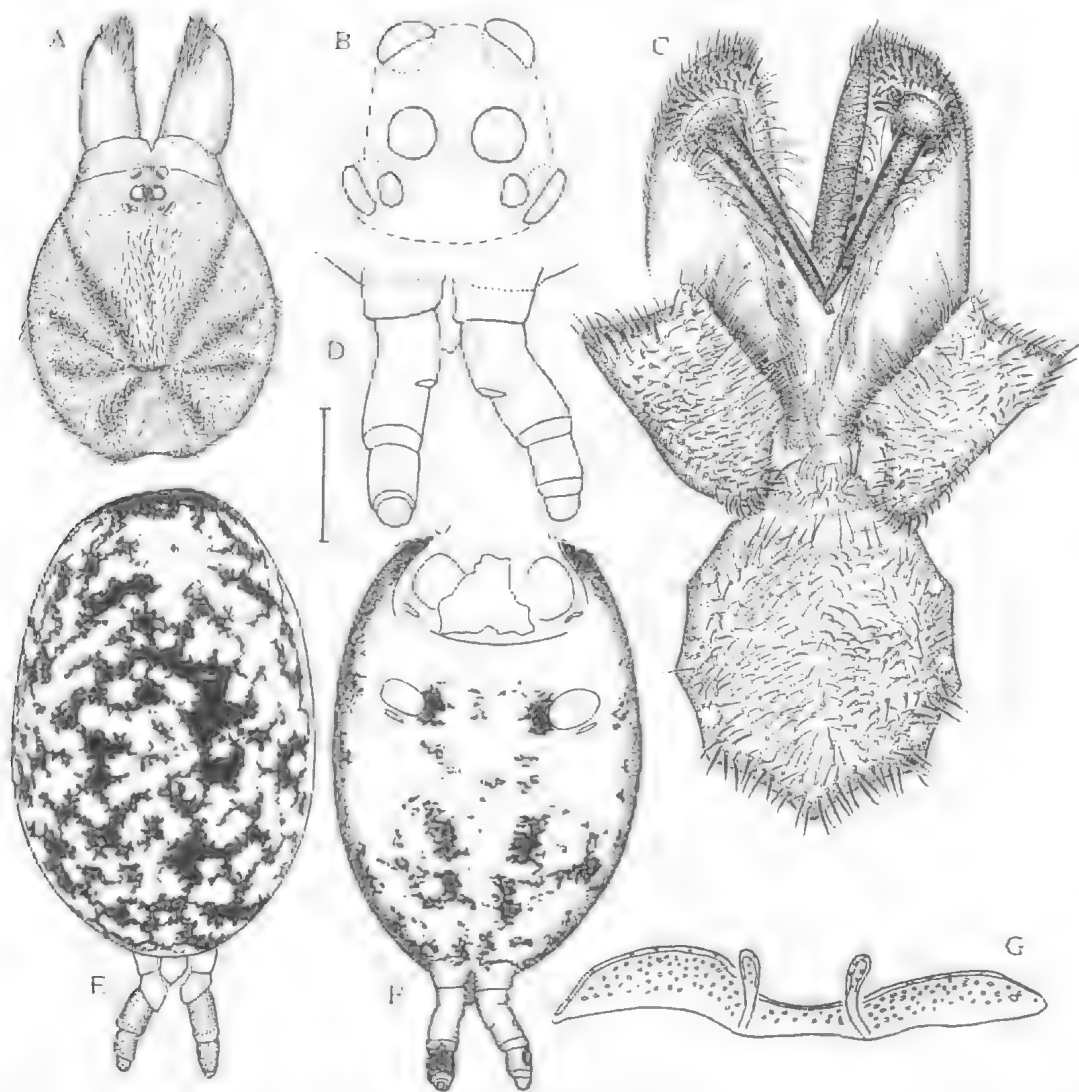


FIG. 103. *Ozicrypta wrightae* sp. nov., holotype ♀ (QMS9649). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, sternum, maxillae & labium, ventral view; D, spinnerets, ventral view; E, F, abdomen, dorsal view (E), ventral view (F); G, spermathecae. Scale line = 2mm (A, E, F); 0.5mm (B); 1mm (C, D); 0.25mm (G).

OTHER MATERIAL EXAMINED. juv. ♀, Mt Cleveland, NEQ, altitude 460-560m, 19°15'14-32"S 147°01'40"-02'E, A. Graham, 20 Jan 1991, QMS18221.

#### DIAGNOSIS

Differs from the sympatric *Mandjelia wooroonooran* in fewer maxillary cuspules, almost aspinose metatarsi I, II, thorn spines on femora and patellae III and IV and the distinct rastellum. Differs from *O. littleorum* by lacking basifemoral thorns; having bigger rastellum, having the scopulae on metatarsi and tarsi I and

II entire, and in the scopula on metatarsi III and being more extensive.

PMS absent. Maxillae with c.6 cuspules. FEMALES. Basifemoral thorns absent. One spine only (femora) on I, II. Group of thorn-like setae on prodorsal and dorsal edges of femora III, IV and proximal prodorsal corner of patellae III, IV. Preening combs on retrolateral metatarsi III, IV. Scopula on metatarsi III, IV divided into 2 distal triangles. Spermathecae consist of two wide, very low mounds with slender sinuous lobe ventrally slightly longer than mounds are high. MALES. Unknown.

## ETYMOLOGY

For Judith Wright, noted poet, naturalist, defender of the environment and co-founder of the 'Wildlife Preservation Society of Queensland'.

## DESCRIPTION

## HOLOTYPE FEMALE QMS9649

Carapace 4.08 long, 3.60 wide. Abdomen 6.83 long, 4.67 wide. Total length, 13.

**Colour.** Carapace, chelicerae, and legs yellow brown. Abdomen dorsally mainly white with irregular brown mottling, ventrally pallid with small brown markings on inner side of book-lungs, two pairs centrally and some small areas posteriorly.

**Carapace.** Rounded with uniform light cover of fine grey hairs; band of longer thick setae beside striae except that beside fovea; setae thickest near posterior striae; c.12 thick posteriorly directed anteromedial setae plus several rows of thicker setae along caput up to eyes. Clypeus absent. 3 long thick and c.10 smaller bristles between ALE; 4 long and c.8 shorter between PME. Lateral margins with single line of thicker setae. 3 thin shelves of hirsute sclerotised cuticle above coxae II-IV. Fovea wide, distinctly procurved.

**Eyes.** Back row slightly procurved. Group occupies 0.38 of head-width; front width, back width, length, 30:41:38. MOQ front width, back width, length, 26:28:18. AME:ALE:PME:PLE, 11:12:5:11. Eye interspaces: AME-AME, 0.5; AME-ALE, 1.0; ALE-ALE, 0.8; PME-PLE, 0.2; PME-PME, 1.6; ALE-PLE, 1.8.

**Chelicerae.** Small, slightly porrect; single band of short brown setae on prodorsal surface. Rastellum is slightly raised area about size of basal fang with many short, thick curved setae. Promargin with 8 teeth, basomesally 9 small teeth and 10 granules.

**Labium.** 0.84 wide, 0.36 long; labiosternal suture two large separate sigilla.

**Maxillae.** 1.32 long in front, 1.84 long behind, 0.84 wide; with c.6-7 cuspules in distinct line along inner edge; with distinct anterior lobe and rounded heel.

**Sternum.** 2.32 long, 2.16 wide. Rounded without hairs on anterior or lateral fringes; uniform setae over surface with thicker setae on posterior margins. All sigilla small, oval, marginal.

**Legs.** Basifemoral thorns absent. One very long seta (I, II) or spine basodorsally on femora I-IV. Group of short thorn-like setae on prodorsal and

dorsal edges of femora III, IV and proximal prodorsal corner of patellae III, IV. Preening combs: group of 4 long setae on retrolateral III, IV.

	I	II	III	IV	Palp
Femur	2.72	2.48	2.08	3.12	2.08
Patella	2.00	1.60	1.36	1.60	1.36
Tibia	1.84	1.44	1.36	2.64	1.20
Metatarsus	1.36	1.28	1.60	3.12	-
Tarsus	1.12	1.04	0.90	1.20	1.04
Total	9.04	7.85	7.30	11.68	5.68

**Scopula.** Metatarsi: I, II, distal 1/2 thin, mixed with setae on II; III with 2 small distal triangles, proventral group bigger; triangles even narrower on IV. Tarsi: I, II, very short, thin, parted by thicker hairs. Tarsi III, full, similar density, divided by band of thicker hair 4-5 setae wide; IV, similar to III but brown setae part scopula and scopula bands wider than setal band.

**Spines.** Absent on legs I, II, save fe p1 on both. III: fe d1, r2, pa p1, ti p1, r1, v6, me p3, r2, v5. IV: fe d1, r1, pa 0, ti r2, v7, me p2, r3, v5; absent one palp, save ti v3w.

**Claws.** One (on IV) or two (I) small teeth; palpal claw noticeably smaller than tufts and other claws, bare. Claw tufts on legs dense but not enclosing claws.

**Trichobothria.** Two rows, each of c.7 on tibiae for full length; c.12 in curved row on metatarsi; no clavate evident, c.6 long and 4 short filiform on tarsi.

**Spermathecae.** Two wide, very low mounds with slender sinuous lobe entirely slightly longer than mounds are high.

**Spinnerets.** PMS absent, PLS length of basal, middle, apical, and total articles 0.80, 0.32, 0.20, 1.32, respectively.

## DISTRIBUTION &amp; HABITAT

Mt Bellenden-Ker, in rainforest at an altitude of about 500m; a doubtfully conspecific juvenile was taken from Cape Cleveland, near Townsville; both in NEQ.

## SYMPATRIC MYGALOMORPHS

Mt Bellenden Ker: *Mandjelia wooroonooran* sp. nov., *Triname loki* Raven (Barychelidae); *Conothele* sp. (Ctenizidae); *Cataxia* sp., *Homogona* sp. (Idiopidae); *Ixamatus burinu* Raven, *Namea nebulosa* Raven, *Aname earthwatchorum* Raven (Nemesiidae); Migidae; *Phlogiellus* sp. (Theraphosidae); *Masteria tod-dae* Raven (Dipluridae).

## REMARKS

On Mt Bellenden Ker, *O. wrightae* is known only from 500m altitude whereas *Mandjelia wooroonoran* is found from 500-1054m.

*Seqocrypta* gen. nov.

## DIAGNOSIS

Differs from the New Caledonian *Encyocrypta* in that the posterior median spinnerets are smaller, the sternum is about as wide as long or wider, whereas in *Encyocrypta* it is clearly longer than wide (Raven & Churchill, 1990). In ♀♀, the fovea of *Seqocrypta* is distinctly procurved whereas in *Encyocrypta* it is straight or only slightly curved. *Seqocrypta* differs from *Tritame* Koch and *Zophorame* Raven in having far fewer maxillary cuspules and from *Idiommatata* in lacking a stridulatory lyra and in the less hirsute carapace. *Seqocrypta* can be also distinguished from *Tritame*, *Zophorame*, and *Idiommatata* by the dorsal abdomen being mottled pattern rather than uniformly brown or black. *Seqocrypta* differs from *Ozicrypta* and *Moruga* in that ♂♂ lack any tibial spur and/or ♀♀ have multilocular spermathecae.

## DESCRIPTION

Carapace rounded, hirsute. Dorsal abdomen mottled; legs without annulations. Fovea short, straight (♂♂) to distinctly procurved (♀♀). Clypeus absent. Eyes on tubercle in 3 rows. Maxillary lyra absent. Maxillae with 5-20 cuspules on inner corner, heel slightly produced, anterior lobes small, rounded. Cuspule microstructure: c. 40-60mm in maximum diameter; intercrest distance, 0.6mm apart; profile, bilaterally uniform balloon; ridge direction, continuous over smooth crest, like thumbprints; cuspule interspace, 2 or more diameters. Rastellum absent. Labium wider than long, no cuspules. Sternum cordate, about as long as wide, 3 pairs of round, marginal sigilla. Claws on legs I, IV of similar size. Preening combs present or absent on III, IV. Four spinnerets: posterior median spinnerets well developed. FEMALES. Few spines on legs I, II. Scopula usually entire on metatarsi and tarsi I and II, thin and divided by setae, if present, on metatarsi III, IV. Basifemoral thorns present or absent. Thorn spines on distal femora and patellae III, IV, absent. Paired claws with one row of teeth, if any, medially. Claw tufts well developed on palp; palpal claw about as high as tufts. Spermathecae are one pair of dimorphic lobes arising from separate basal mounds; typically each lobe

is multilocular, rarely mushroom-shaped. MALES. No basomesal granules on cheliceral furrow. Claws with 1 row of teeth, if any, medially. Tibia I without spur, megaspine or microspur. Palpal bulb simple, pyriform, without keels. Cymbium dimorphic, lobes subequal; sometimes retrolaterally concave in dorsal view.

## ETYMOLOGY

From a random combination of letters based on the south-eastern region of Queensland.

## TYPE SPECIES

*Seqocrypta jakara* sp. nov.

## SPECIES INCLUDED

*Seqocrypta bancroftii* sp. nov.  
*Seqocrypta hamlynharrisii* Raven & Churchill sp. nov.  
*Seqocrypta jakara* sp. nov.  
*Seqocrypta mckeownii* sp. nov.

*Seqocrypta jakara* sp. nov.

(Figs 2A, B, 12F, 13O-Q, 14A, B, 109-113, Table 8)

## MATERIAL EXAMINED

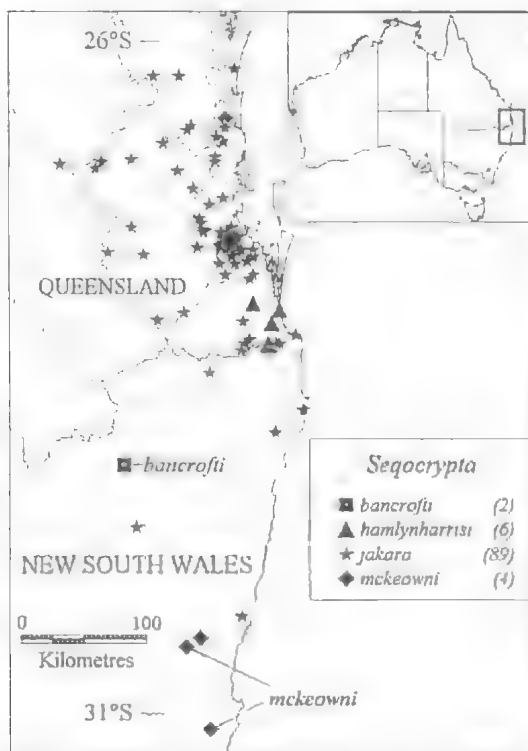
YPES. Holotype ♂, Acacia Ridge, Brisbane, 27°28'S 153°03'E, 23 May 1970, ED, QMS11246; ♀ allotype, same data, QMS11387. Brookfield, 27°30'S 152°55'E: 1 ♀, 2 May 1980, B. Mitchell, QMS16711; ♀, Gold Ck Reservoir, closed forest, litter, 30 Oct 1980, VTD, RK, QM S19067; 2 ♀♀, same data but, 28 Nov 1980, QMS19068; 3 ♀♀, same data but, in pitfall, 3-18 Mar 1981, QMS19069. Camira, 27°38'S 152°55'E, open forest: 1 ♀, 17 Nov 1980, B. Hollett, QM S6673; ♀, 24 Mar 1980, R. Brown, QM S17803; ♂, 1 Oct 1990, RR, QM S17804 All in SEQ.

Pine Mt, Ipswich, 27°31'S 152°44'E, rainforest, pitfall trap, GSM: ♂, 9 Nov 1975-27 Feb 1976, QM S6623; ♀, 20 Aug-9 Nov 1975, QM S8727. ♀, Greenbank, 27°43'S 152°58'E, Dec 1971, QMS16706. All in SEQ.

OTHER MATERIAL EXAMINED. QM S Registrations: 6600-6603; 6605-6640; 6642-6676; 6721, 6722, 6725-8; 6730-33; 6735, 6736; 6893; 7144, 7145, 8197, 8223, 8236, 8722, 8727, 8730-32, 8737, 8740, 8741, 11241, 11246, 11307, 11312, 11314, 11387, 11389, 15458, 15539, 16441, 16684, 16685, 16688, 16691, 16692, 16702-16716, 17234, 17672, 17707, 17803, 17804, 19067-19076, 20190, 1 (bleached) ♂, Binna Burra, Lamington National Park, SEQ, 23 May 1961, M. Tapiolas, EUQ; ♀, labeled *Idiommatata reticulata*, 'Bowen', (BMN11 1919.9.18.5693, see remarks); ♀, Brisbane, 10 Oct 1957, W. Haseler, EUQ.



	<i>bancrofti</i>	<i>hamlynharrisi</i>	<i>jakara</i>	<i>mckeowni</i>
Size of PMS	small	large	small	small
No. maxillary cuspules	9-12	13-20	5-20	7-8
♂ Tibia I spination	weak	strong	weak	?
Tooth rows: leg I(IV)	1(0)	1(1)	1(1)	?
♀ Spermathecal lobes	1 + 1	1 + 1	1 + 1	1 + 1
Spermathecae shape	Y-shaped	mushroom-shape	multilocular	multilocular
Basifemoral thorns	absent	I, II	few	absent
Scopula metatarsi III(IV)	1/2	1/6	1/2(1/5)	absent
Preening combs III(IV)	present	present	absent	strong
Autapomorphy	♀ tarsi => metatarsi I	embolus tip		♀ tarsi => metatarsi
Habitat	rainforest	rainforest	lowlands	rainforest
Distribution	Poverty Pt, NNSW	uplands, SEQ	lowland, SEQ	Dorrigo

Table 8. *Seqocrypta* speciesFIG. 109. Records of *Seqocrypta* in SE Queensland with catchment boundaries & N New South Wales.

## ETYMOLOGY

From an aboriginal word for the region.

## DIAGNOSIS

Females differ from those of all other *Seqocrypta*, save *S. mckeowni*, in the multilocular spermathecae and further from those of *S. ham-*

*lynharrisi* in the relatively longer legs (leg I/CL = 2.2 cf. 1.9); ♂♂ have the retrolateral face of the cymbium straight to convex whereas in *S. hamlynharrisi* it is distinctly concave. Females differ from those of *S. mckeowni* in having scopula on metatarsi III and IV.

PMS present, distinct. 5-20 cuspules on maxillae. FEMALES. Rastellum absent. Preening combs present. Basifemoral thorns few to absent. Spermathecae each with the main single folded lobe and 2 or more short lobes; scopula on metatarsi III divided by setae into two thin triangular areas. MALES. Palpal bulb with tapering embolus and no keels or spirals; tibia I without spur; claws with 2-3 small teeth in one row.

## DESCRIPTION

## HOLOTYPE MALE QMS11246

Carapace 6.88 long, 5.52 wide. Abdomen 6.40 long, 4.00 wide. Total length, 15.

**Colour.** Carapace and chelicerae orange to red brown, legs yellow brown, Abdomen dorsally mottled with white spots interspersed with brown areas; ventrally white with few small brown areas, laterally brown.

**Carapace.** Long brown hairs and golden hairs interspersed between uniform cover of short brown hairs. Fovea short, slightly procurved. Bristles: 3 foveal pairs; 5 between ALE, 3 on clypeal edge, c. 12 anteromedially.

**Eyes.** Group is 0.26 of head-width; front width, back width, length, 41:53:48. Back row recurved. MOQ front width, back width, length, 36:36:29. AME:ALE:PME:PLE, 18:17:10:15. Eye interspaces: AME-AME, 0.2; AME-ALE, 0.6; ALE-ALE, 0.6; PME-PLE, 0.1; PME-PME, 1.2; ALE-PLE, 1.4.

**Chelicerae.** Many long bristles medially. Rastellum and rastellar mound absent. Furrow

promargin with 9 teeth, basomesally without granules.

*Labium*. 1.12 wide, 0.44 long. Labiosternal suture broad, shallow, two sigilla.

*Maxillae*. 1.88 long in front, 2.44 long behind, 0.96 wide; with 12-13 cuspules in narrow curved group. Anterior lobe short, just distinct.

*Sternum*. 3.32 long, 2.92 wide. Sigilla all oval, marginal.

*Legs*. Tibia I without spurs or evident modifications. Thorn spines absent. Preening combs: one, each of 2-3 weak setae retroventrally on each of legs III, IV

	I	II	III	IV	Palp
Femur	5.50	5.00	4.75	6.42	3.50
Patella	3.58	3.17	2.83	3.25	2.42
Tibia	4.42	3.67	3.33	5.33	2.83
Metatarsus	3.75	3.33	4.50	6.75	—
Tarsus	2.08	2.08	2.25	2.50	1.58
Total	19.33	17.25	17.66	24.25	10.33

*Scopula*. Metatarsi I, II, entire for distal 3/4 (II) to 5/6 (I); III, divided by setal band into 2 thin triangles reaching to 1/3; IV, as on III but only for distal 1/4. Tarsi: I, II, entire, full; III, full length,

divided by 2-3 lines of setae; IV, as on III but 4-5 dividing setal bands.

*Spines*. I: fe p1, d4, pa p1, v4, ti p3, v10, me p1, v3. II: fe p2, d4, pa p1, v1, ti p3, v8, me p1, v3. III: fe p3, d5, r3, pa p3, r1, v2, ti p4, d4, r3, v8, me p4, r6, v10. IV: fe p2, d5, r3, pa r1, ti p3, d5, r5, v13, me p6, d5, r7, v13. Palp: fe p2, d4, r1, pa v2, ti, p1, v6.

*Claws*. All similar in size, with 2-3 small teeth medially; claw tufts not enclosing claws.

*Trichobothria*. Two rows, each of c. 10 on tibiae for full length; c. 20-30 on metatarsi; 2 separate rows each of 10 filiform on tarsi.

*Palp*. Bulb pyriform without keels, with long curving embolus. Retrolateral face of cymbium straight to convex.

*Spinnerets*. PMS 0.24 long, 0.10 wide, 0.14 apart, c. 0.20 of basal PLS in diameter. Length of basal, middle, apical, and total articles of PLS, 0.80, 0.26, 0.12, 1.18, respectively.

#### ALLOTYPE FEMALE QMS11387

Carapace 8.80 long, 7.60 wide. Abdomen 7.83 long, 5.67 wide. Total length, 19.



FIG. 110. Habitus *Seqocrypta jakura*, ♀

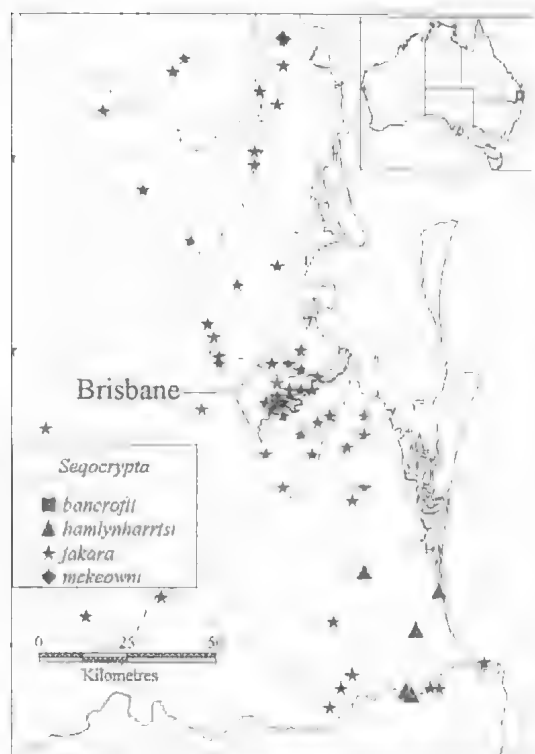


FIG. 111. Records of *Segocrypta jakara* & *S. hamlynhartrisi* in SE Queensland, N New South Wales with catchment boundaries & 500m contours.

**Colour.** Carapace, chelicerae, and legs orange brown. Abdomen dorsally maculate like ♂, venter mostly pallid.

**Carapace.** Pile of fine brown hairs and moderately long brown bristles. Bristles: moderately long curved on lateral margins, several fine anteromedian, 4 long thick and 6 finer on clypeal edge, 6 thick between PME, 2 thin in front of AME. Fovea slightly procurved with median indentation.

**Eyes.** Group is 0.20 of head-width; front width, back width, length, 45:69:66. Back row recurved. MOQ front width, back width, length, 45:49:35. AME:ALE:PME:PLE, 22:18:13:20. Eye interspaces: AME-AME, 0.3; AME-ALE, 0.7; ALE-ALE, 0.7; PME-PLE, 0.1; PME-PME, 1.3; ALE-PLE, 1.6.

**Chelicerae.** Broad, with fairly short hairs. Rastellum with long curved setae, not spines, on low mound. Furrow promargin with 7 large and 3 small teeth; basomesally with 2 small teeth and 10-12 granules.

**Labium.** 1.60 wide, 0.72 long. Labiosternal suture wide, shallow.

**Maxillae.** 2.56 long in front, 3.52 long behind, 1.68 wide; with 14-15 cuspules along inner edge. Anterior lobe small, distinct, delimited by short groove.

**Sternum.** 4.32 long, 3.92 wide. Sigilla all oval, marginal.

**Legs.** Basifemoral thorns weak on IV, elsewhere absent. Thorn spines absent. Preening combs: one, each of 3-6 setae retroventrally on each of III, IV.

	I	II	III	IV	Palp
Femur	6.08	5.17	4.75	6.67	4.58
Patella	4.33	3.75	3.00	3.92	3.08
Tibia	4.33	3.50	3.08	5.00	2.50
Metatarsus	3.17	3.25	4.25	6.50	-
Tarsus	1.58	1.83	2.25	2.33	2.25
Total	19.49	17.50	17.33	24.42	12.41

**Scopula.** Metatarsi: I, entire, full; II, similar, divided by few scattered setae; III, in two bands for half length; IV, in two distal triangular areas in distal 1/5. Tarsi (all for full length): I, entire; II, divided by 2-3 narrow setal rows; III, divided by 4-6 rows of setae; IV, divided by c.6 rows of setae.

**Spines.** I: fe p1, d4, pa 0, ti p2, v5, me v2. II: fe p1, d3, pa 0, ti p2, v4, me v2. III: fe p2, d3, r3, pa p1, r1, ti p3, r2, v9, me p5, r5, v9. IV: fe p1, d3, r2, pa r1, ti p3, r4, v9, me p5, r4, v16. Palp: fe p1, d4, pa 0, ti v9.

**Claws.** 1-2 small teeth (I, IV); palpal claw bare.

**Trichobothria.** Two rows, each of c.14 on tibiae; c.15-20 on metatarsi; c.10 filiform in each of two rows separated by setae.

**Spermathecae.** Two, each a single twisted main duct with 2 or more smaller lobes.

**Spinnerets.** PMS 0.44 long, 0.10 wide, 0.16 apart, c.0.12 of basal PLS in diameter. PLS length of basal, middle, apical, and total articles 0.88, 0.32, 0.08, 1.20, respectively.

#### DISTRIBUTION, BURROW & HABITAT

*S. jakara* is common in the Brisbane and Moreton regions, SEQ, as far north as Wratten's Camp (just west of Gympie), SEQ, south to Broken Head, Byron Bay, NSW, and west to Cooyar, SEQ. In all of those areas, the spiders are found in rainforest or wet sclerophyll forest. It is remarkable among burrowing spiders in that it continues to be found throughout the following suburbs in greater Brisbane: Acacia Ridge; Ascot; Aspley; Bardon; Beenleigh; Brookfield; Calamvale; Camira; Capalaba; Chapel Hill; Everton Park; Ferny Hills; Fig Tree Pocket; Greenbank; Indooroopilly; Kenmore Hills; Kenmore; Mansfield; Mt Coot-tha; Mt Glorious; Mt Nebo; New Farm; Norman Park; Pine Mt.

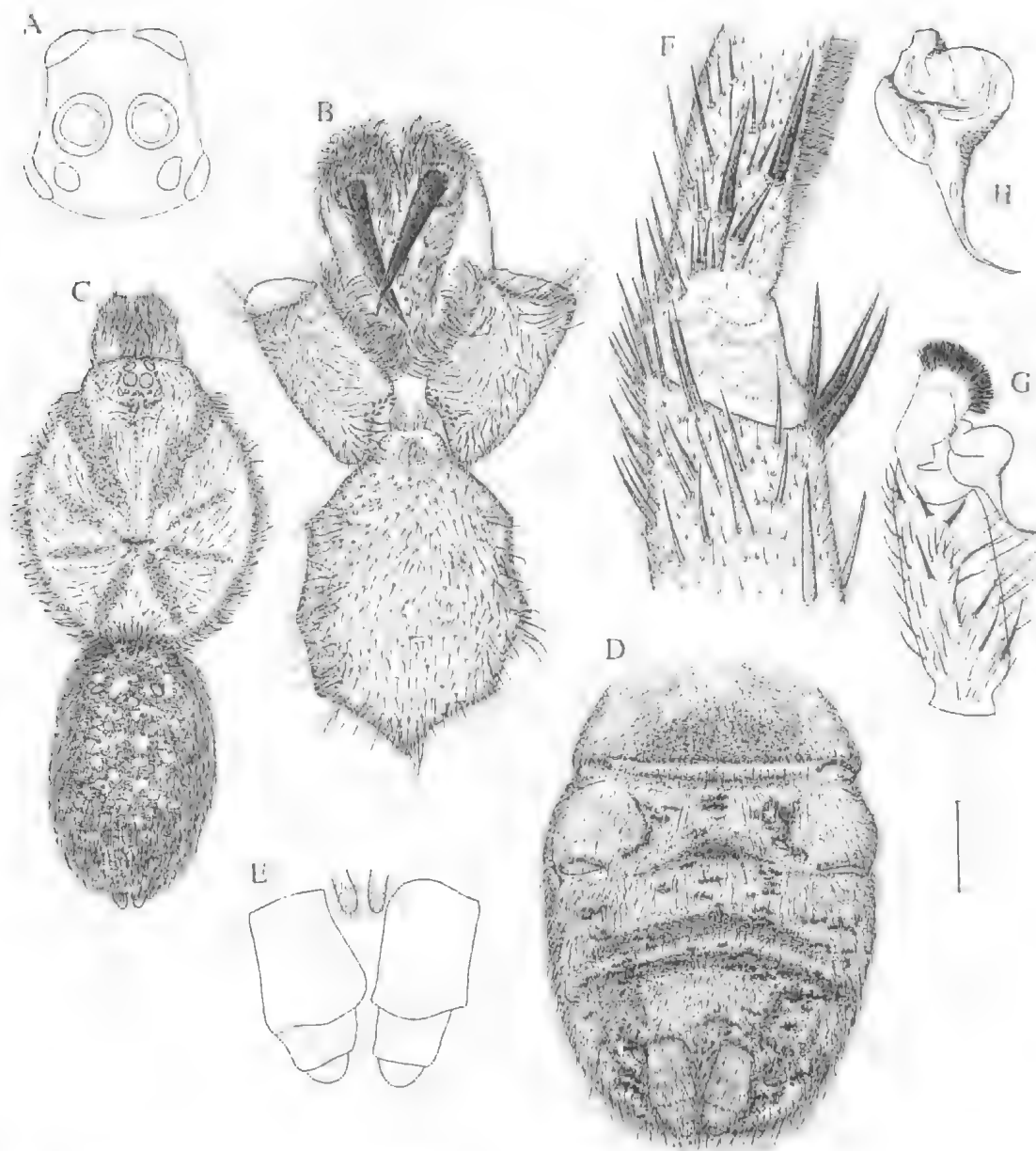


FIG. 112. *Seqocrypta jakara* sp. nov., holotype ♂ (QMS11246). A, eye group, dorsal view; B, chelicerae, sternum, maxillae & labium, ventral view; C, carapace, chelicerae & abdomen, dorsal view; D, abdomen, ventral view; E, spinnerets, ventral view; F, tibia & metatarsus I, prolateral view; G, cymbium & palpal bulb, ventral view; H, palpal bulb, ventral view. Scale line = 0.5mm (A, E, F, H); 1mm (B, D, G); 2mm (C).

Ipswich; Rochedale; Sheldon; St Lucia; The Gap; The Grange; Toowong; Upper Brookfield; Yeronga. Other localities in SEQ are: Bahrs Scrub; Blackbutt Range; Booloumba Ck, Conondale Range; Burleigh Headland; Burpengary; Cainbale Ra, Lamington NP; Canungra; Cun-

ninghams Gap; D'Aguilar Ra; Dayboro; Eagleby; Eudlo, Maleny; Grantham; Kilcoy Deer Reserve; Lamington NP; Lower Albert R; Little Yabba Ck; Marys Creek, via Gympie; Montville; Mt Barney NP; Mt Cabinet, Jimna; Mt French; Mt Mee, Neurum Ck; Nambour; Peachester;

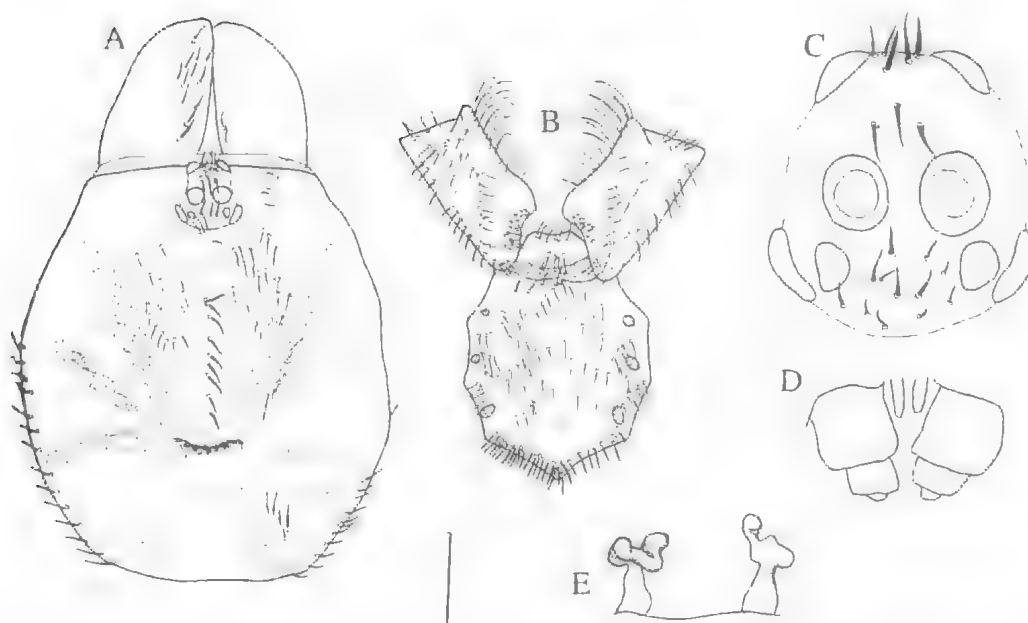


FIG. 113. *Seqocrypta jakaru* sp. nov., allotype ♀ (QMS11387). A, carapace & chelicerae, dorsal view; B, sternum, maxillae & labium, ventral view; C, eye group, dorsal view; D, spinnerets, ventral view; E, spermathecae. Scale line = 2mm (A, B); 1mm (D); 0.5mm (C, E).

Ravensbourne National Park; Searys Scrub, Cooloola National Park; The Palms via Cooyar; Toowoomba; Upper Yarraman State Forest; Wratten's Camp, via Widgee; Yandina. Localities in NSW: Broken Head, Byron Bay; Bruxner Park, Coffs Harbour; Carool; Tomewin; Toonumbar State Forest; West Gibraltar Range.

The burrow is a bulbous chamber with two thin doors set on the soil surface; the entire burrow is generally no more than c.6 cm deep. When removed from the ground, the burrow is a thin-doored and thin-walled amorphous sac.

#### REMARKS

The number of lobes evident in the spermathecae varies with the viewed perspective; between 3 and 8 lobes may be seen in specimens from one locality that are similar in all other characters.

The BMNH ♀ of '*Idiommatia reticulata*' labelled 'Bowen' (see Material Examined) is like *S. jakaru* in every respect except the preening combs on both metatarsi III and IV. Hence, the characters are a combination of those of *S. jakaru* and its sister species *S. mckeowni*. The probable locality confusion constrains me from further comment. The locality label, identification label, and registration number are three separate labels,

written in three different inks and by different people. The locality label may have been confused with others before receipt at the Natural History Museum (London), so I conclude the true locality is probably Brisbane.

A ♂ from Lamington National Park (EUQ) is the only known barychelid from that altitude in SEQ. Females from Yandina, SEQ (QMS6725), and Marlaybrook, SEQ, (26°54'S, 151°35'E; QMS6734) differ from typical *jakaru* only in lacking scopula on leg IV of ♀♀.

#### *Seqocrypta bancrofti* sp. nov. (Figs 109, 114, 115. Table 8)

#### MATERIAL EXAMINED

TYPES. Holotype ♂, allotype ♀, Poverty Ck, near Tenterfield, N. NSW, 29°08'S 152°07'E, 945m, 8 Feb-27 May 1978, GM, QMS16685, S19109.

#### DIAGNOSIS

Resembles *S. jakaru* in the extent of the scopula and differs in the small lateral eye ratio (1.2 vs 2.4) and lacking teeth on the claws of leg IV of ♂♂ ♀♀. The spermathecae of ♀♀ are unique in the genus. It differs from *S. hamlynharrisi* in being half its size, lacking the strong spination of tibia I of ♂♂ and the basifemoral thorns on I. II

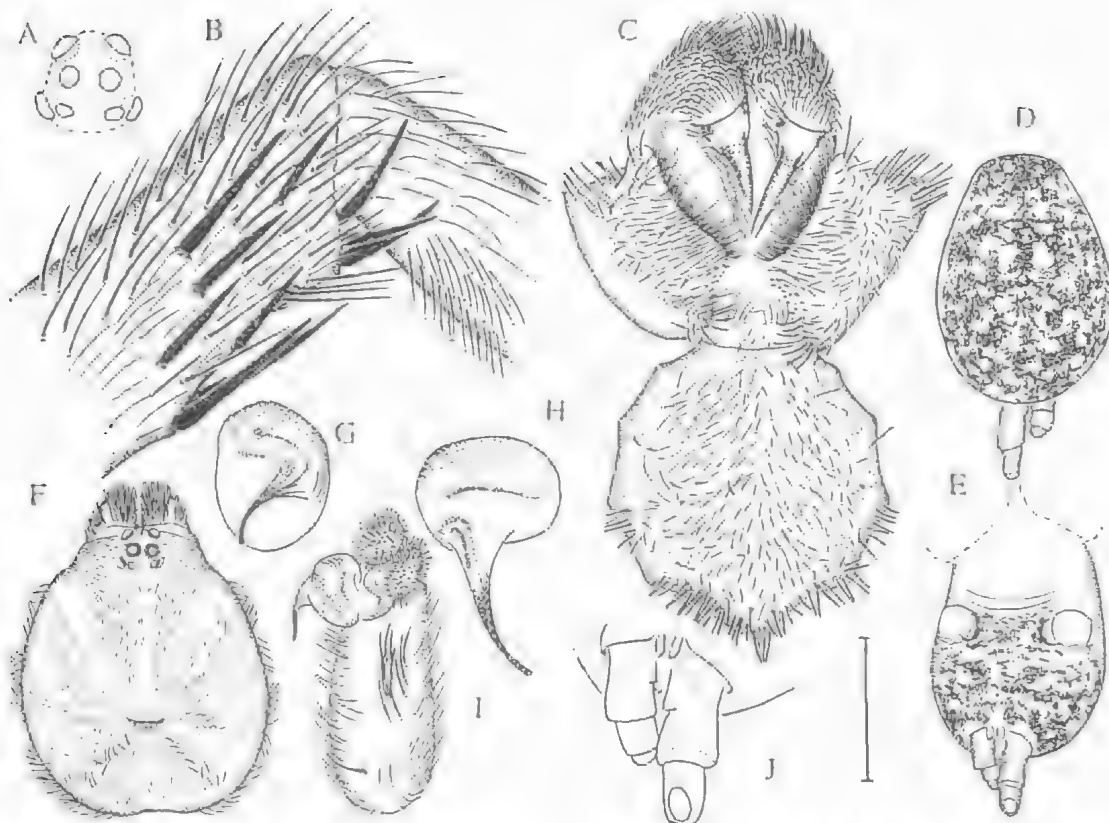


FIG. 114. *Seqocrypta bancrofti* sp. nov., holotype ♂ (QMS16685). A, eye group, dorsal view; B, tibia & metatarsus I, prolateral view; C, sternum, maxillae & labium, ventral view; D, E, abdomen, dorsal (D) & ventral (E) view; F, carapace & chelicerae, dorsal view; G, H, palpal bulb, ventral view; I, cymbium & palpal bulb, ventral view; J, spinnerets, ventral view. Scale line = 1mm (A, C, I, J); 2mm (D-F); 0.5mm (B, G, H).

PMS present, distinct. 9-12 cuspules on maxillae. **FEMALES.** Rastellum absent. Preening combs on III, IV. Basifemoral thorns absent. Spermathecae one on each side, each bilobed, the lobes similar, stout, as wide as long. Scopula on metatarsi III in distal half. **MALES.** Palpal bulb squat, pyriform quickly constricting to long tapering embolus; retrolateral face of cymbium straight; tibia I without spur but mid-ventrally with 3 incrassate spines. 1 small tooth medially (I) or claws bare (IV).

#### ETYMOLOGY

For Dr Thomas Lane Bancroft (1860-1933) of Kelvin Grove and the Eidsvold district, SEQ, in recognition of his many contributions to natural history of spiders and other fauna of the region (see Pearn & Powell, 1991).

#### DESCRIPTION

##### HOLOTYPE MALE QMS16685

Carapace 4.36 long, 3.76 wide. Abdomen 3.76 long, 2.61 wide. Total length, 9.

**Colour.** Carapace, chelicerae, and legs yellow orange, not annulated. Abdomen dorsally brown with large irregular white markings of about equally dominant with brown; ventrally pallid with brown marks; no dorsal or ventral pattern evident.

**Carapace.** Pilosity: very lightly hirsute with uniform cover of short brown setae in radial lines on interstrial ridges and on caput; striae indistinct. Bristles: 4-7 erect black beside posterior striae; few anteromedially and 15-20 in each hand beside caput; 3 long thick and several finer between PME, and c.5 long thick and few finer between ALE; single line of strong brown bristles on lateral margins. Fovea short, slightly procurved.

**Eyes.** Tubercle low, distinct. Group occupies 0.33 of head-width; front width, back width,



length, 28, 31, 27, respectively. Back row procurved. MOQ front width, back width, length, 18, 22, 15, respectively. AME:ALE:PME:PLE, 8:10:6:8. Eye interspaces: AME-AME, 0.5; AME-ALE, 1.5; ALE-PLE, 1.4; PME-PME, 1.1; PME-PLE, 1.0; ALE-ALE, 0.9.

**Chelicerae.** Small, with many long thick bristles prodorsally, laterally a broad band of finer setae. Rastellum absent. Intercheliceral tumescence evident as distinct, large, pallid area. Furrow promargin with 7 small spaced teeth, basomesally with no teeth evident.

**Labium.** 0.27 long, 0.53 wide; cluster of c.5 setae centrally and few finer behind those. Labiosternal suture a narrow groove.

**Maxillae.** 1.11 long in front, 1.57 long behind, 0.67 wide; with 10-12 blunt cuspules in inner angle. Heel rounded; anterior lobe distinct.

**Sternum.** 2.12 long, 1.93 wide. Sigilla all small, oval, marginal.

**Legs.** Tibia I without spur or modification but mid-ventrally with 3 incrassate sessile spines. Scopulate surfaces of metatarsi, tarsi I, II incrassate, pallid. Thorn spines absent. Preening combs: 1 of 2-3 weak setae on retroventral III, IV.

	I	II	III	IV	Palp
Femur	3.09	3.03	2.85	3.45	2.12
Patella	2.12	1.82	1.52	1.64	1.27
Tibia	2.61	1.70	2.00	2.97	1.76
Metatarsus	1.52	1.82	2.30	3.76	-
Tarsus	1.64	1.58	1.58	1.88	0.85
Total	10.98	9.95	10.25	13.70	6.00

**Scopula.** Metatarsi: I, II, distal 1/2-1/3(II), thin; III, two triangles in distal 1/3; IV, like III but in distal 1/6. Tarsi: I, II, full, thin, divided by single line of setae; III, divided by narrow setal band 6-8 wide; IV, like III, band 8-10 wide.

**Spines.** I: fe p1, d5, pa 0, ti p2, v12, me v2. II: fe p1, d4, pa 0, ti p2, v6, me v2. III: fe p1, d4, r3, pa p4, r1, v1, ti p4, d2, r2, v9, me p3, r3, v7. IV: fe d3, r1, pa r1, v1, ti p2, d2, r3, v8, me p4, d1, r4, v8. Palp: fe p1, d3, pa 0, ti v1.

**Claws.** 1 small tooth medially (I) or bare (IV); all similar size and rise above tufts.

**Trichobothria.** Two rows, each of c.6 for 2/3 of tibiae; c.6 on metatarsi in curving row; c.20 small filiform on tarsi.

**Palp.** Bulb squat, pyriform quickly constricting to long tapering embolus; cymbium bilobed; retrolateral face of cymbium straight.

**Spinnerets.** PMS 0.24 long, 0.07 wide, 0.07 apart, and about 3.00 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 0.53, 0.46, 0.02, 1.01 long, respectively.

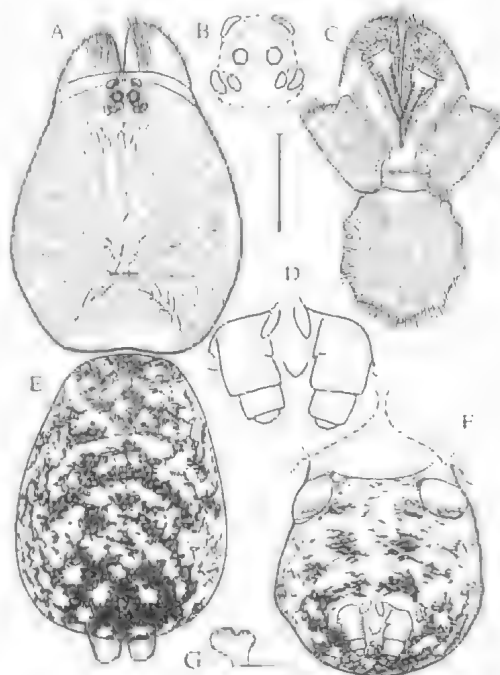


FIG. 115. *Seqocrypta bancroftii* sp. nov., allotype ♀ (QMS19109). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, chelicerae, sternum, maxillae & labium, ventral view; D, spinnerets, ventral view; E, abdomen, dorsal (E) & ventral (F) view; G, spermathecae. Scale line = 2mm (A, C, E, G); 1mm (B, D); 0.5mm (G).

#### ALLOTYPE FEMALE QMS19109

Carapace 5.94 long, 4.69 wide. Abdomen 5.78 long, 4.38 wide. Total length, 12.

**Colour.** Carapace, chelicerae, and legs yellowish, not annulated. Abdomen dorsally brown with 4 irregular recurved white bands; ventrally pallid with brown marks in front of spinnerets, medially and near posterior booklung covers.

**Carapace.** Pilosity: light pile of fine yellow hairs along striae edges; striae indistinct, narrow. Bristles: 1-2 erect black beside posterior striae; 5 anteromedially and 8-10 thinner in band beside caput; 4 long thick and few finer between PME, and 5 long thick and few finer between ALE; short hairs on lateral margins. Fovea broad, procurved.

**Eyes.** Tubercle distinct. Group occupies 0.27 of head-width; front width, back width, length, 32, 41, 32, respectively. MOQ front width, back width, length, 24, 27, 18, respectively. AME: ALE:PME:PLE, 8:13:6:12. Eye interspaces: AME-AME, 1.0; AME-ALE, 2.1; ALE-PLE,

2.0; PME-PME, 1.0; PME-PL, 1.0; ALE-ALE, 1.1.

**Chelicerae.** Few long and many short bristles prodorsally, laterally a wide pile of short setae. Rastellum absent. Furrow promargin with 8 spaced teeth, basomesally with c.10 small teeth in basal third.

**Labium.** 0.42 long, 0.85 wide; 5 long setae in transverse midline and few setae in band behind that. Labiosternal suture a wide continuous groove.

**Maxillae.** 1.52 long in front, 2.12 long behind, 0.97 wide; with 9-10 cuspules in inner angle. Heel produced; anterior lobe narrow, distinct.

**Sternum.** 2.30 long, 2.06 wide. Sigilla posterior pair evident, oval, marginal; others not evident.

**Legs.** Basifemoral thorns and thorn spines absent. Preening combs; 1 of 3-4 strong setae on retroventral III, IV.

	I	II	III	IV	Palp
Femur	3.09	2.97	2.85	3.58	2.61
Patella	2.36	2.30	1.88	2.36	1.82
Tibia	2.12	1.94	1.70	2.79	1.58
Metatarsus	1.52	1.52	2.12	3.52	-
Tarsus	1.52	1.58	1.82	1.94	1.64
Total	10.61	10.31	10.37	14.19	7.65

**Scopula.** Metatarsi: I, II, full, moderately dense, entire; III, one triangle in distal 1/2; IV, two triangles in distal 1/4, divided by setal band. Tarsi: I, II, full, moderately dense, entire; III, IV, divided by narrow setal band 8-10 wide.

**Spines.** Legs I, II, fe p1, pa 0, ti 0, me v2; leg III, fe p1, r1, pa p3, ti p3, r1, v6, me p3, r2, v4; leg IV, fe r1, pa r1, ti p1, r3, v7, me p1, r3, v7. Palp: fe p1, d3, pa 0, ti v4.

**Claws.** 1 small and 1 minute tooth medially (I), or bare (IV); palpal claw smaller than tufts, bare.

**Trichobothria.** Two rows, each of c.7 for 3/4 of tibiae; c.10 on metatarsi in sharply curved row; c.16 small filiform on tarsi.

**Spermathecae.** One on each side, each bilobed, the lobes similar stout, as wide as long.

**Spinnerets.** PMS 0.19 long, 0.12 wide, 0.22 apart, and c.0.40 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 0.65, 0.27, 0.14, 1.06 long, respectively.

#### DISTRIBUTION & HABITAT

Rainforest at Poverty Point, NE NSW.

**Seqocrypta hamlynharrisi** Raven & Churchill, sp. nov.

(Figs 91, J, 109, 111, 116-117. Table 8)

#### MATERIAL EXAMINED

**Types.** Holotype ♂, Upper Tallebudgera Ck, 28°15'S 153°16'E, October 1990, DC, QMS17759; ♀ allotype, Mt Cougal, Upper Currumbin Valley, 28°12'S 153°24'E, 17 Oct 1988, GM, QMS11236; ♂, Coolangatta region, donated by A. Bullen via Coolangatta Veterinary Hospital, 3 May 1991, QMS18838; ♀ paratype, 'Goondnonda', Mudgeeraba, 28°05'S 153°21'E, 11 Jun 1992, R. Preston, QMS20385; ♂, Nerang, 27°59'S 153°25'E, 14 Apr 1992, B. Higgins, QMS20372. All in SEQ.

**Other material examined.** ♂, Mapleton Falls National Park, SEQ, 26°38'S 152°51'E, 3 Mar-17 Apr 1992, DC, QMS19540.

#### DIAGNOSIS

Females differ from those of *S. jakara* in the simple mushroom-shaped spermathecae and having preening combs, and patella III clearly longer (subequal or shorter than in *S. jakara*) than tibia III. In ♂♂, the retrolateral face of the cymbium of ♂♂ is strongly concave and apically constricted rather than straight to convex, as in *S. jakara*.

PMS well developed. Maxillae with 13-20 cuspules. Lateral eye ratio clearly less than 2. **FEMALES.** 2-5 fine basifemoral thorns on I, II. Spermathecae two, each a stout lobe with distal expansion. **MALES.** Without spur but many spines on ventral tibia I; claws with 1 row of teeth; palpal bulb pyriform; embolus short, sigmoidal and apically flattened tip; cymbium with distinct apical constriction forming strongly concave retrolateral face.

#### ETYMOLOGY

For Dr Ronald Hamlyn-Harris (1874-1953), Director of the Queensland Museum from 1910-1917, who in 1911 instigated a modern system of data storage and retrieval for research collections (Ingram, 1986).

#### DESCRIPTION

**HOLOTYPE MALE** QMS17759

Carapace 7.81 long, 7.00 wide. Abdomen 7.69 long, 5.88 wide. Total length, 17.

**Colour.** Carapace and chelicerae dark burgundy brown, femora lighter, patellae to tarsi lighter red brown. Abdomen dorsally brown with uniform white mottling forming no pattern; ventrally about equally brown and white.

**Carapace.** Pilosity: uniform cover of fine black hairs and distinct bush of long golden brown

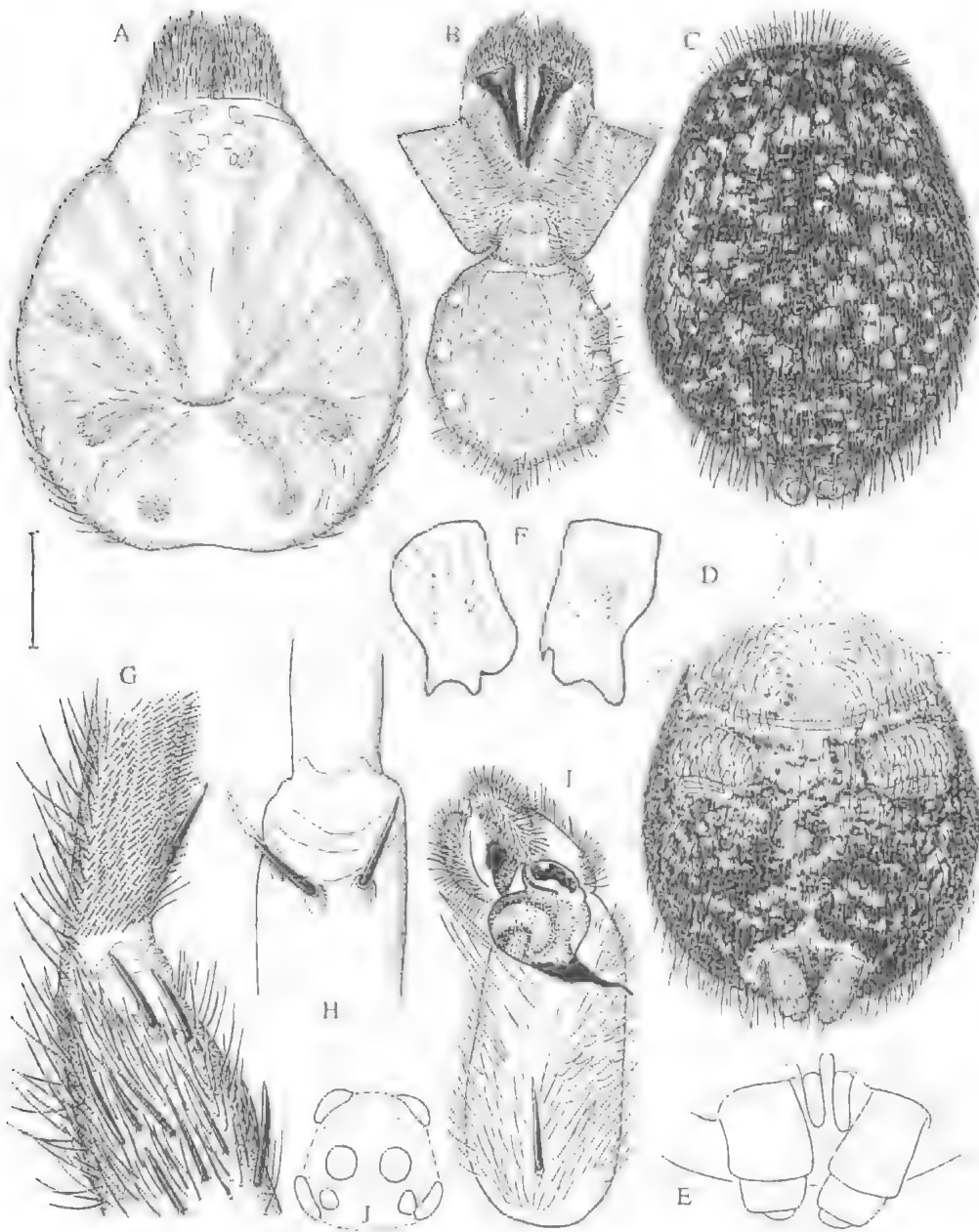


FIG. 116. *Seqocrypta hamlynharrisi* sp. nov., holotype ♂ QMS17759, A-E, G-J; QMS18835, F). A, carapace & chelicerae, dorsal view; B, chelicerae, sternum, maxillae & labium, ventral view; C, D, abdomen, dorsal (C), ventral view (D); E, spinnerets, ventral view; F, cymbia, dorsal view, distal end uppermost; G, tibia & metatarsus I, prolateral view; H, tibial spur, ventral view; I, cymbium & palpal bulb, ventral view; J, eye group, dorsal view. Scale line = 1 mm (A-D, F); 0.5 mm (E, G-I).

hairs, sometimes obscuring cuticle, on caput, in terrestrial ridges, and strongest on margins; striae indistinct, shallow; c.10 erect black bristles be-

side posterior striae; c.10 black long and strong bristles anteromedially and band of weaker but equally long beside caput; 5 long thick bristles

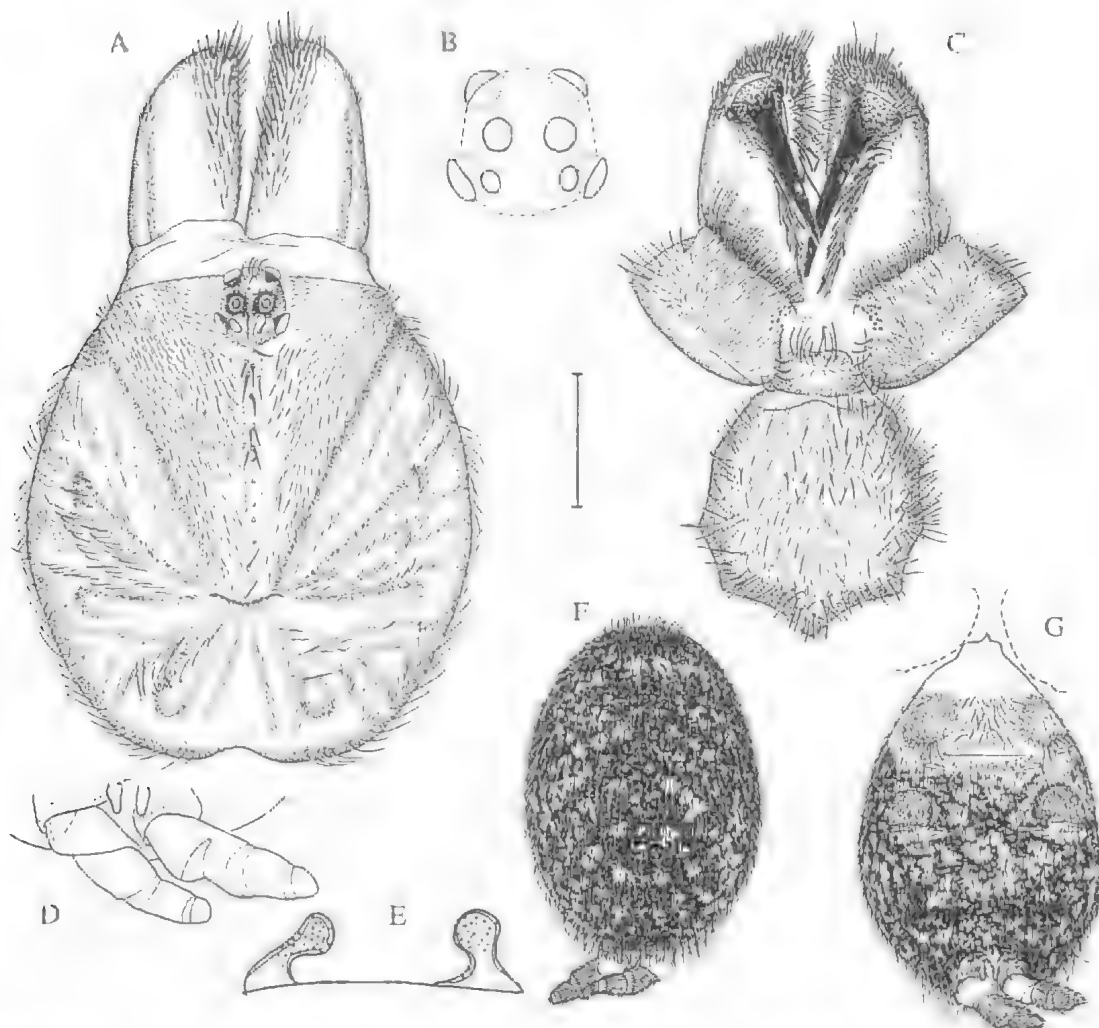


FIG. 117 *Seqocrypta humptyharris* sp. nov., allotype ♀ (QMS11236) A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, chelicerae, sternum, maxillae & labium, ventral view; D, spinnerets, ventral view; E, spermathecae; F, G, abdomen, dorsal (F), ventral view (G). Scale line = 2mm (A, C, D); 1mm (B); 4mm (F, G); 0.5mm (E).

and 8-10 finer between PME, c.5 thick on clypeal edge, 3 long thick and 6-8 finer between ALE; bush of long black bristles and shorter golden hairs on lateral margins, most dense on posterior corner. Fovea short, procurved.

**Eyes.** Tubercle distinct, raised. Back row straight. Group occupies 0.33 of head-width; front width, back width, length, 40, 54, 48, respectively. MOQ front width, back width, length, 35, 37, 29, respectively. AME:ALE: PME:PLE, 13:17:11:18. Eye interspaces: AME-AME, 0.6; AME-ALE, 1.0; ALE-PLE, 1.5; PME-PME, 1.5; PME-PLE, 0; ALE-ALE, 1.1.

**Chelicerae.** Long brown bristles and golden bristles prodorsally, laterally golden hairs not evident. Rastellum absent. Furrow promargin with 3 large and 6 smaller spaced teeth, basomesally without granules or teeth.

**Labium.** 0.60 long, 1.20 wide. Labiosternal suture a continuous shallow groove.

**Maxillae.** 2.00 long in front, 2.68 long behind, 1.20 wide; with 12-14 cuspules along inner edge. Heel broad, rounded; anterior lobe just distinct.

**Sternum.** 4.12 long, 3.52 wide. Sigilla all oval, marginal; posterior pair c.10% of sternal width; middle c.5%; anterior 2-3%.

**Legs.** Tibia I without spur but with c. 16 strong spines on raised distinct red bases on proventral face; spines not thicker than on other legs. Thorn spines and preening combs absent. Uniform cover of strong black bristles and light pile of golden brown hairs. Tarsi IV curved slightly. Scopulate area of tarsi pallid.

	I	II	III	IV	Palp
Femur	5.75	5.31	5.00	6.63	3.63
Patella	3.63	3.56	3.06	3.38	2.31
Tibia	4.13	3.75	3.38	5.31	2.69
Metatarsus	3.44	3.19	4.00	6.50	-
Tarsus	1.94	1.94	2.00	2.31	1.44
Total	18.89	17.75	17.44	24.13	10.07

**Scopula.** Longer on prolateral face of metatarsi than retrolateral. Metatarsi: I, II, in distal 2/3, moderately dense, entire; III, in distal 1/3, divided by setal band 3-4 wide; IV, two narrow bands in distal 1/6. Tarsi: I, II, full, dense, entire; III, divided by narrow band of light coloured fine setae (cf. IV) 3-4 wide; IV, divided by narrow band of setae; distal on tarsus setae are fine light coloured but proximally normal brown and thicker.

**Spines.** I: fe p2, d5, pa 0, ti p5, v19, me v2. II: fe p2, d4, pa p1, ti p3, v9, me v3. III: fe p2, d5, r3, pa p2, r1, ti p3, d3, r3, v11, me p6, d1, r5, v11. IV: fe p1, d5, r1, pa r1, ti p3, d7, r7, v16, me p7, d11, r10, v13. Palp: fe p1, pa 0, ti p1, v3.

**Claws.** I small and I very small tooth on medial keel; all claws of similar size.

**Trichobothria.** Two rows, each of c. 10 for length of tibiae; c. 8 on metatarsi in curving row; c. 4 fine clavate and 15-20 filiform on tarsi.

**Palp.** Bulb stout pyriform; embolus short, sigmoidal and apically flattened tip; cymbium with distinct apical constriction forming strongly concave retrolateral face. All claws long and higher than tufts.

**Spinnerets.** PMS 0.52 long, 0.15 wide, 0.08 apart, and c. 0.20 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 1.00, 0.45, 0.25, 1.70 long, respectively.

#### ALLOTYPE FEMALE QMS17759

Carapace 7.84 long, 6.80 wide. Abdomen 10.16 long, 7.76 wide. Total length, 20.

**Colour.** Carapace, chelicerae, and legs dark brown. Abdomen dorsally brown with small white mottling forming slight herringbone effect posteriorly; ventrally predominantly brown with white mottling centrally.

**Carapace.** Uniform cover of fine black wavy hairs; long straight black bristles posteriorly on lateral margins, anteriorly only long fine hairs; 5-7 long erect black bristles flank posterior striae;

15-20 anteromedially with bands of shorter bristles laterally; 3 thick and several fine between PME, 3 long between ALE and also on clypeal edge; 3-4 foveal pairs; anterior striae glabrous, distinct, others hirsute, indistinct. Fovea distinctly procurved.

**Eyes.** Group occupies 0.29 of head-width; front width, back width, length, 47:62:50. Back row procurved. MOQ front width, back width, length, 36:40:29. AME:ALE:PME:PLE, 12:19:9:18. Eye interspaces: AME-AME, 0.9; AME-ALE, 1.2; ALE-ALE, 1.4; PME-PLE, 0.1; PME-PME, 1.8; ALE-PLE, 1.8.

**Chelicerae.** Narrow, prodorsally with band of few long and numerous short black bristles; laterally a glabrous band and narrow band of short bristles; upper interface with numerous short setae. Rastellum a small mound with many short curved setae. Furrow promargin with 1 small distal and 8 large, spaced teeth, basomesally with 12 small teeth and 10-15 granules extending to basal half.

**Labium.** 1.20 wide, 0.56 long. Labiosternal suture a wide groove of two sigilla.

**Maxillae.** 2.08 long in front, 2.88 long behind, 1.36 wide; with c. 13-20 cuspules in inner area. Heel rounded; anterior lobe indistinct.

**Sternum.** 4.00 long, 3.52 wide. Sigilla small, oval, marginal.

**Legs.** I and IV of similar girth. 2-5 fine basifemoral thorns on I, II. Thorn spines absent. Preening combs: 1 each of 2-3 strong setae on retroventral III, IV. Prolateral face of coxae I-IV with uniform cover of many short strong thorn-like spines.

**Scopula.** Continuous with tufts; extends for lower 180-200° of tarsi I, II. Metatarsi: I, II, full, dense, entire with few setae mixed throughout; III, in distal 1/3, two slender triangles separated by bristles; IV, similar but smaller and in distal 1/6. Tarsi: I, II, full, dense, entire, save for narrow line of very fine setae in I band; III, IV, full, moderately dense, divided by setal band 6-8 wide.

	I	II	III	IV	Palp
Femur	4.56	4.48	3.84	5.60	3.84
Patella	3.36	3.20	2.64	3.28	2.48
Tibia	3.20	2.72	2.16	4.00	2.40
Metatarsus	2.32	2.32	3.12	4.96	-
Tarsus	1.44	1.44	1.60	2.16	1.92
Total	14.88	14.16	13.36	20.00	10.64

**Spines.** I: fe p1, d5w, pa 0, ti v4, me v2. II: fe p2, d3w, pa 0, ti p2, v4, me v2. III: fe p1, d3w, r1, pa p2, r1, v1, ti p2, r2, v9, me p4, r3, v9. IV: fe d3w, r1, pa r1 v1, ti p1, r3, v12, me p5, r4, v11. Palp: fe p1, pa 0, ti v7.

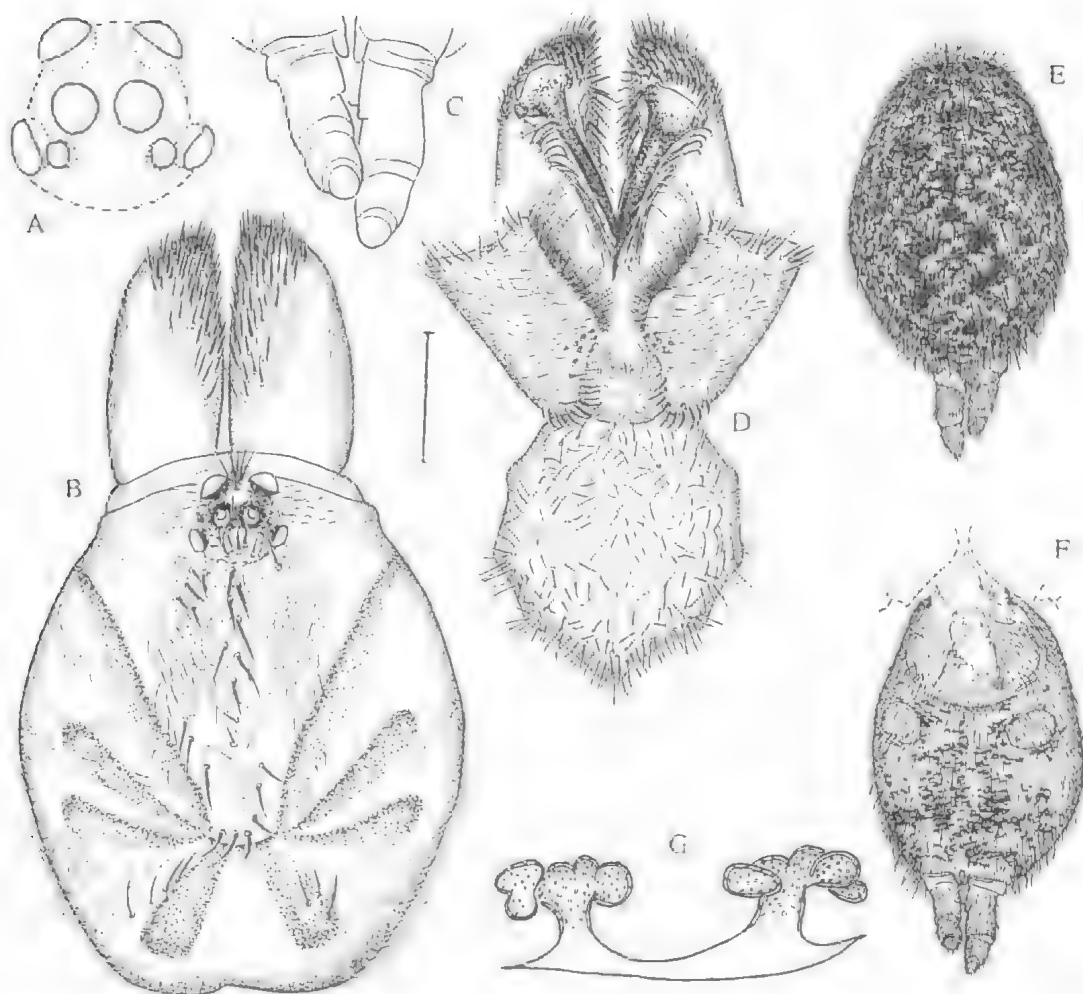


FIG. 118. *Sequoyia mckeowni* sp. nov., holotype ♀ (QMS8217). A, eye group, dorsal view; B, carapace & chelicerae, dorsal view; C, spinnerets, ventral view; D, chelicerae, sternum, maxillae & labium, ventral view; E, F, abdomen, dorsal (E), ventral view (F); G, spermathecae. Scale line = 2mm (B, D); 4mm (E, F); 1mm (A, C); 0.2mm (G).

**Claws.** 1-3 small teeth on median keel (I, IV); palpal claw bare, slightly smaller than tufts.

**Trichobothria.** Two rows, each of 10 for full tibiae; c.15 in curved row on metatarsi, row curves sharply on I, II; 4 small clavate and c.24 filiform on tarsi.

**Spermathecae.** Two, each a stout lobe with distal expansion.

**Spinnerets.** PMS 0.44 long, 0.20 wide, 0.20 apart, c.0.23 of basal PLS in diameter. PLS length of basal, middle, apical, and total articles 1.52, 0.76, 0.72, 3.00, respectively.

#### DISTRIBUTION, BURROW & HABITAT

Rainforest and the open forest ecotone at Mt Cougal, in the Numinbah Valley, Upper Talbudgera Ck, and Mt Tamborine, near Southport, SEQ. The ♀ was taken from a tubular retreat under a log; other material has been taken from under logs with space below the ventral surface. The tubes with two-door barrel nests.

#### REMARKS

The ♂ from Mapleton Falls (S19540) is excluded from the type series because it has fewer spines on tibia I than typical specimens of *S. jakara* and a ♀ from nearby Yandina has sper-



mathecae like *S. jakara* which suggests a complex of species exists.

*Seqocrypta mckeowni* sp. nov.  
(Figs 109, 118, Table 8)

MATERIAL EXAMINED

Types. Holotype ♀, Sherrard Falls, Dorrigo National Park, Station 8, 30°24'S 152°45'E, 12 Mar 1981. J. Stanisic, D. Potter, QMS8217. Paratypes: 1 ♀, Kempsey, 9 Apr 1985, S. Jolly, QMS6729; ♀, Dichapny Sin Property, north arm of Bellingen R valley, 30°28'S 152°38'E, 12 Mar 1981. O. Griffiths, QMS8213; ♀, Gibraltar Ra, 29°35'S 152°13'E, lower, 450m, rainforest, pitfall trap, 30 Mar-10 Nov 1980, GM, QMS6657. All in N NSW.

OTHER MATERIAL EXAMINED

♀, Rotary Pk, Lismore, 28°49'S 153°16'E, NSW, rainforest, pitfall, 6 Nov-26 Dec 1974, GSM, QMS17715.

DIAGNOSIS

Females differ from those of all other *Seqocrypta* species, save *S. jakara*, in having multilocular spermathecae. They differ from those of *S. jakara* in having preening combs but no scopula on metatarsi III or IV.

PMS present, small. FEMALES. Basifemoral thorns absent. Maxillae with c. 7-8 cuspules. Rastellum a low mound with moderately long strong curved bristles. Strong preening combs on III, IV. Scopula absent on metatarsi III, IV, confined to distal half of I, II. Spermathecae two, multilocular, like *S. jakara*. MALES. Unknown.

ETYMOLOGY

For Keith McKeown, 1892-1952, whose arachnological contributions began as Scientific Assistant to A. Musgrave, Australian Museum, and later became Assistant Curator (Nairn & Serle, 1986).

DESCRIPTION

HOLOTYPE FEMALE QMS8217

Carapace 4.56 long, 3.84 wide. Abdomen 5.68 long, 4.08 wide. Total length, 13.

Colour. Carapace, chelicerae, and legs orange brown. Abdomen dorsally brown with large white mottling forming pallid central band; ventrally pallid with small brown mottling generally scattered and large brown area just behind centre.

Carapace. Few grey bristles in lines on interstitial ridges. Bristles: 1 long black and several shorter beside posterior striae; c. 14 thick and several finer anteromedially; c. 5 almost paired

foveal ending to one third of distance to eyes; 5 thick and several finer bristles between PME; 5 thick and several finer between ALE; anterior lateral margins of carapace glabrous, posterior margins with few fine hairs; fovea distinctly procurved. Caput arched. Striae shallow, distinct.

Eyes. Tubercle low, indistinct. Group occupies 0.35 of head-width; front width, back width, length, 34:46:35. Back row procurved. MOQ front width, back width, length, 25:30:19. AME:ALE:PME:PLE, 9:13:6:11. Eye interspaces: AME-AME, 0.9; AME-ALE, 1.3; ALE-ALE, 1.4; PME-PLE, 0.1; PME-PME, 2.0; ALE-PLE, 1.9.

Chelicerae. Narrow; prodorsally with narrow band of erect brown bristles mixed with numerous shorter bristles, laterally a glabrous strip with short pallid setae forming slight band. Rastellum a low mound with moderately long strong curved bristles. Furrow promargin with 7 spaced teeth, basomesally with c. 10 small teeth.

Labium. 0.72 wide, 0.44 long. Labiosternal suture a shallow, narrow indistinct groove.

Maxillae. 1.32 long in front, 1.92 long behind, 0.92 wide; with c. 7-8 cuspules in inner angle. Heel produced, rounded; anterior lobe indistinct.

Sternum. 2.48 long, 2.24 wide. Sigilla all, small, marginal, indistinct.

Legs. Metatarsi I, II noticeably shorter than tarsi. Femora clothed in hairs and bristles; elsewhere only bristles. Basifemoral thorns absent. Thorn spines absent but patellar spines short. Preening combs: 1 each of 3 (III) to 5 (IV) strong grouped setae.

	I	II	III	IV	Palp
Femur	2.32	2.56	2.16	3.12	2.16
Patella	1.52	1.36	1.36	1.68	1.44
Tibia	1.44	1.04	1.20	2.32	1.44
Metatarsus	1.04	1.04	1.28	1.36	-
Tarsus	1.04	1.12	1.12	1.36	1.12
Total	7.36	7.12	7.12	10.96	6.16

Scopula. Distal 1/4 to 1/3 of each hair of scopula and claw tufts noticeably enlarged with bluish tinge. Metatarsi: I, II, in distal 1/2, thin, divided by bristles; III, IV, only few scattered hairs. Tarsi: I, II, moderately dense, full, divided for full length by setal band 2-3 wide; III, IV, thin, setal band wider (6-10) than each scopula band.

Spines. I: fe p1w, d6w, pa 0, ti 0, v5w, me v3. II: fe d5w, pa 0, ti v3w, me v4. III: fe(w) p1, d3, r1, pa p5, v1, ti p2, v8, me p6, r2, v10. IV: fe d4 long weak, r1, pa 0, ti p3w, r2, v9, me p5, r4, v12. Palp: fe d2w, pa 0, ti v3.

	<i>arrakis</i>	<i>boongaree</i>	<i>bulleri</i>	<i>durakoppin</i>	<i>goongarie</i>	<i>harveyi</i>	<i>houstoni</i>	<i>hosi</i>	<i>lanura</i>
Size of PMS	minute-absent	absent	absent	teat	cap-like	absent	minute	absent	absent
No. maxillary cuspules	7-14	7	5-10	27-31	9-12	19	10-13	8-11	17-20
Dorsal abdomen, pattern	lightly mottled	dorsally mottled	dorsally mottled	fishbone	fishbone	mottled	mottled	dorsally mottled	mottled
Ventral abdomen, pattern	pallid	pallid	pale spotted	pallid	pallid	pallid	pallid	broken V	pallid
♂ Tibial spur position	distal	distal	subdistal	subdistal	?	distal	distal	distal	distal
Tibial megaspine	long curved	short straight	stout	long curved	?	stout curved	straight	long curved	long curved
Spur size	low	very low	raised cone	low cone	?	raised cone	low mound	low cone	low mound
Upper megaspine	long slender	short	long curved	short curved	?	short conical	short cone	long curved	thin curved
Tibial microspur	absent	vestigial	minute	vestigial	?	dome	triangular	absent	absent
Palpal bulb	broad	large twisted	large twisted	slender twisted	?	simple twisted	simple twisted	long twisted	simple twisted
Keels on bulb	1 + many fine	3 + many fine	3 large	2 + many fine	?	2 large	3 large	2 + many fine	2 + many fine
Main keel edge	smooth	smooth	smooth	smooth	?	smooth	smooth	smooth	smooth
Embolus origin	distal	distal	distal	distal	?	distal	subdistal	distal	distal
Claw sizes I cf IV	smaller	equal	equal	equal	?	smaller	smaller	equal	smaller
Tooth rows: legs I(IV)	0(0)	2(1)	2(2)	2(0)	?	1(0)	0(0)	2(2)	2(2)
Interchitellal tumescence	small setose	absent	absent	pallid	?	absent	small setose	absent	absent
♀ Spermathecal lobes	1 + 1	?	?	?	2 + 2	?	?	?	?
Spermathecae shape	lobed mound	?	?	?	simple lobes	?	?	?	?
Rastellum	weak	absent	low spinose mound	absent	spinose area	absent	absent	strong spinose group	low spinose mound
Patellar thorns III(IV)	strong setae	absent	setae	absent	setae	setae	absent	weak	setal comb
Basifemoral thorns	absent	?	?	?	absent 1/8	?	?	?	?
Claw sizes I cf IV	minute	?	?	?	smaller	?	?	?	?
Scopula metatarsi III(IV)	absent	1/2(1/4)	1/3(1/5)	1/4(1/6)	present	1/5(1/6)	1/5(absent)	1/3(1/5)	1/4(1/5)
Preening combs III(IV)	present	absent	absent	absent	IV only	IV only	absent	weak on IV	absent
Autapomorphy	eye colour			eye group shape					
Habitat	Mallee scrub	'runicrest'	?		Mallee/ <i>Trindia</i>	Murti/Jarrah		<i>E. salomon-ophloia</i> woodland	
Distribution	Buningoma Spring, WA	Boongaree I., NW WA	Barrow I., WA	Durokoppin Nat. Res., SW WA	Goongarie, WA	Mt Cooke, SW WA	McDermid Rock, NW WA	Bungabbin Hill, SW WA	Karara Well, NW WA

Table 9. *Synthele* species without distinct or with minute to cap-like posterior median spinnerets (part 1).

	<i>koonalda</i>	<i>lowei</i>	<i>meadhueneri</i>	<i>moonabie</i>	<i>ooldea</i>	<i>pectinata</i>	<i>subquadrata</i>	<i>yundamindra</i>
Size of PMS	absent	>< cap	cap-like	minute tufts	absent	cap-like	absent	absent
No. maxillary cuspules	14-15	10-18	7-9	8-9	5-6	9	12	6
Dorsal abdomen, pattern	mottled	mottled	mottled	mottled	mottled	mottled	black	mottled
Ventral abdomen, pattern	brown V	pallid	pallid	pallid	pallid	pallid	><pallid	pallid
♂ Tibial spur position	distal	distal	distal	?	?	?	distal	distal
Tibial megaspine	strong straight	strong straight	long curved	?	?	?	short, strong	long slender
Spur size	short cone	v low	indistinct	?	?	?	low cone	very low
Upper megaspine	short curved	absent	absent	?	?	?	straight	absent
Tibial microspur	absent	absent	absent	?	?	?	triangular	absent
Palpal bulb	stout twisted	pyriform	simple	?	?	?	simple	simple twisted
Keels on bulb	3 large	1 large	1 long + many fine	?	?	?	1 large	1 lge + many fine
Main keel edge	smooth	smooth	smooth	?	?	?	smooth	smooth
Embolus origin	distal	gradual	distal	?	?	?	distal	distal
Claws of leg I cf IV	equal	equal	equal	?	?	?	equal	equal
Tooth rows; legs I(IV)	2(2)	2(0)	0(0)	?	?	?	0(0)	0(0)
Interchelical tumescence	small pallid	absent	small pallid setose	?	?	?	absent	small, indistinct
♀ Spermathecal lobes		1 + 1	?	1 + 1	2 + 2	1 + 1	?	?
Spermathecae shape		lobed mound	?	lobe mound	simple lobes	lobed mound	?	?
Rastellum	absent	low spinose mound	weak	low spinose mound	low spinose mound	strongly spinose	absent	absent
Patellar thorns III(IV)	absent	setae	absent	many	setae	many strong	absent	absent
Basifemoral thorns	?	I, II, IV	?	absent	absent	absent	?	?
leg I claws cf IV		smaller		smaller	smaller	equal	?	?
Scopula metatarsi III(IV)	1/4(1/6)	absent	1/6(absent)	1/2(1/4)	absent	1/3(1/5)	I-IV absent	absent
Preening combs III(IV)	present	present	absent	present	present	absent	pro & retro	absent
Autapomorphy						large claws on I	eye group shape	
Habitat				mallee		Gunlet woodland	'rainforest'	Mallee
Distribution	Koonalda, SW SA	Bullsbrook, SW WA	Queen Victoria Spring, WA & Roxby Downs, SA	Moonabie, SA	Ooldea, SA	Woodline, WA	Osborne I, NW WA	Yundamindra, WA

Table 9 (continued). *Synothele* species without distinct or with minute to cap-like posterior median spinnerets.

	<i>longbottomi</i>	<i>michaelseni</i>	<i>mullaloo</i>	<i>parifusca</i>	<i>rastelloides</i>	<i>rubripes</i>	<i>taurus</i>
Size of PMS							
No. maxillary cuspules	10	very small c.14	very small 9	very small 20	very small 11-12	distinct small 11	small lobes 14-17
Dorsal abdomen, pattern	mottled	mottled	mottled	mottled	mottled	mottled	mottled
Ventral abdomen, pattern	>mottled	pallid	pallid	pallid	pallid	pallid	pallid
♂ Tibial spur position	distal	distal	distal	?	?	distal	?
Tibial megaspine	strong straight	stout conical	strong straight	?	?	strong curved	?
Spur size	low cone	distinct cone	low	?	?	low conical	?
Upper megaspine	short curved	short straight	short curved	?	?	short conical	?
Tibial microspur	small lobe	absent	distinct	?	?	long lobe	?
Palpal bulb	>pyniform	twisted	twisted	?	?	lge twisted	?
Keels on bulb	1 large	1 lge + many fine	1 lge + many fine	?	?	2 lge + many fine	?
Main keel edge	smooth	serrated	serrated	?	?	smooth	?
Embolus origin	>gradual	distal	distal	?	?	distal	?
Claws of leg I of IV	smaller	smaller	smaller	?	?	smaller	?
Tooth rows: legs I(IV)	1(0)	1(1)	1(1)	?	?	?	?
Intercheliceral tumescence	absent	absent	small pale setose	?	?	small setose	?
♀ Spermathecal lobes	?	1 + 1	?	1 + 1	1 + 1	?	1 + 1
Spermathecae shape	?	lobed mounds	?	lobed mound	lobed mound	?	lobed mound
Rastellum	absent	absent	absent	absent	raised conical spinose process	spinose mound	small spinose process
Patellar thorns III(IV)	absent	only setae	absent	absent	setae	setae	present
Basifemoral thorns	?	I-IV	?	absent	I, II, palp	?	absent
leg I claws of IV	?	much smaller	?	smaller	smaller	?	smaller
Scopula metatarsi III(IV)	1/5(1/8)	1/5	1/4(1/5)	>absent	absent	1/6	1/3(1/4)
Preening combs III(IV)	absent	present	present	present	present	?	absent
Autapomorphy					?		
Habitat	Marri/Jarrah woodland	open forest					
Distribution	Mt Cooke, SW WA	Perth & surrounds, WA	Mullaloo Beach, SW WA	Recherche Archipelago, WA	Denmark, SW WA	Dwellingup, SW WA	Bullsbrook, SW WA

Table 10. *Synothele* species with readily evident but small or distinct posterior median spinnerets.

**Claws.** 0-1 teeth (I) to no teeth (IV, palp); palpal claw slightly smaller than tufts.

**Trichobothria.** Two rows, each of 7 for 2/3 on tibiae; c.9 in curved row on metatarsi; 1 clavate and c.10 filiform on tarsi.

**Spermathecae.** Two, multilocular, like *S. jakara*.

**Spinnerets.** PMS 0.34 long, 0.14 wide, 0.14 apart, c.0.27 of basal PLS in diameter. PLS, length of basal, middle, apical, and total articles 1.04, 0.36, 0.24, 1.64, respectively.

#### DISTRIBUTION & HABITAT

Dorrigo National Park, an area of rainforest, in NE NSW. Burrow unknown.

#### *Synothele* Simon, 1908

*Synothele* Simon, 1908, p. 364; Rainbow, 1911, p. 116; Roewer, 1942, p. 218; Bonnet, 1958, p. 4225; Main, 1985, p. 13; Brignoli, 1983, p. 129; Raven, 1985b, p. 113; Platnick, 1989, p. 95.

#### DIAGNOSIS

Differs from *Ozicrypta* in that claws on I of ♀♀ are reduced to about half the height of the claw tufts and of claws on IV, and from *Aureocrypta* in lacking the broad glabrous ridge on the labium and in having poorly developed, if any, posterior median spinnerets. Unlike *Ozicrypta*, ♂ *Synothele* may lack teeth entirely on the claws.

#### DESCRIPTION

**FEMALES.** Carapace ovate, lightly hirsute, some species with brown markings, most with fine black setae; enlarged setae beside posterior striae and anteromedially. Caput lightly arched; striae, all save anterior pair narrow distinct; lateral margins lightly setose; more hirsute in ♂♂. Fovea short, deep, transverse, procurved; straight in ♂♂. Eye group subquadrate to longer than wide; back width greater than front to varying extents; tubercle distinct but not steeply defined posteriorly; eyes in 3 rows. Clypeus absent. Chelicerae short, stout; rastellum present (*S. arrakis*, *S. rastelloides*, *S. butleri*, *S. goongarie*, *S. howi*) or weak to absent; rastellar mound barely evident to well developed (*S. rastelloides*). Cheliceral furrow with many teeth on promargin; basomesally a cluster of small teeth and granules, teeth reach up to midlength of furrow. No modifications evident on cheliceral faces of ♀♀; ♂♂, intercheliceral tumescence absent (*S. boongaree*, *S. butleri*, *S. harveyi*, *S. howi*, *S. karara*, *S. longbottomi*, *S. lowei*, *S. michaelseni*, *S. sub-*

*quadrata*) or small, pallid and setose (*S. arrakis*, *S. durokoppin*, *S. houstoni*, *S. koonalda*, *S. meadhunteri*, *S. mullaloo*, *S. rubripes*, *S. yundamindra*). Maxillae longer than wide; cuticle microsculpture reticulated; heel slightly produced; anterior lobe short defined by long groove; few (2-25) small cuspules clustered on inner angle of maxillae, cuspules not on raised dome. Cuspule microstructure: c.50-60µm in maximum diameter; intercrest distance, c.0.7µm apart; profile, bilaterally uniform balloon slightly higher than wide; ridge direction, continuous over smooth crest, like thumbprints; cuspule interspace, 2 or more diameters. Labium wider than long, no cuspules, suture broad, low; generally uniformly setose, a line of 3-5 erect curved setae just behind narrow transverse medial ridge. Sternum wide, cordate; all sigilla small, marginal, oval. Legs moderately stout, setose but not hirsute save for adpressed grey hairs. Thorn spines strong (*S. rastelloides*, *S. goongarie*) or weak to absent. Preening combs present (most species) or absent on III, IV (*S. rubripes*, *S. durokoppin*, *S. karara*, *S. butleri*, *S. houstoni*). Basifemoral thorns in ♀♀ (*S. michaelseni*, *S. lowei*, *S. rastelloides*) or absent; always absent in ♂♂. Claws of leg I of ♀♀ very small, half size of tuft and of claws of leg IV or smaller (*S. michaelseni*, *S. arrakis*, *S. goongarie*, *S. lowei*, *S. lugubris*, *S. parifusca*, *S. rastelloides*), rarely as high as tuft (*S. pectinata*). Claws on I of ♂♂ very small, half the size of tuft or smaller (*S. michaelseni*, *S. arrakis*), clearly concealed within tufts to about half size of tuft (*S. mullaloo*, *S. lowei*, *S. meadhunteri*, *S. houstoni*, *S. yundamindra*) or evident well above claw tufts (*S. butleri*, *S. howi*, *S. durokoppin*, *S. karara*, *S. rubripes*); edentate or with teeth in 1-2 rows. Two rows of trichobothria on tibiae, one very short strongly curving row on metatarsi, two rows on tarsi including few clavates basally. Claws tufts small, narrow in cross-section, continuous with scopula, triangular viewed axially or dorsally. Scopula in distal 2/3-1/4, entire on metatarsi I, II, entire, full but weak on tarsi I, II and extend for lower 160° of articles; effectively absent on metatarsi III, IV; divided on tarsi III, IV. Legs lightly spinose. Abdomen lightly hirsute, dorsally maculate, ventrally pallid with brown areas. PMS strongly reduced, a pair of tufted mounds (most species), short to minute but longer than wide (*S. michaelseni*, *S. rubripes*, *S. parifusca*), or entirely absent (*S. butleri*, *S. karara*, *S. howi*); PLS comparatively small, short, apical segment domed. Spermathecae two, each a small coniform mound with wide lateral lobe and large spheroidal apex.

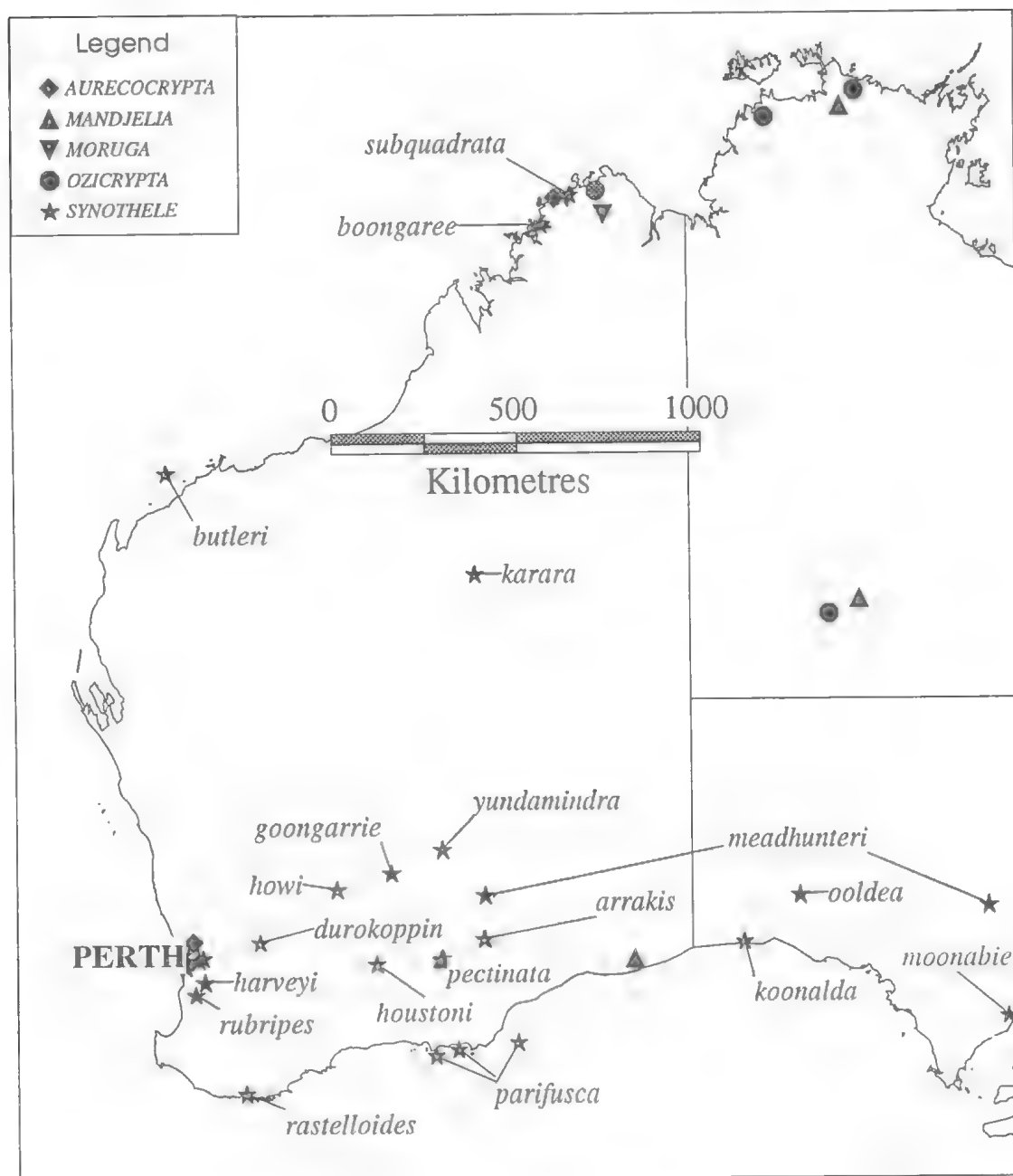


FIG. 119. Records of *Synothele* in southern & western Australia.

**MALES.** Tibia I with spur and prolateral megaspine, microspur present (*S. mullaloo*, *S. rubripes*, *S. durokoppin*, *S. butleri*, *S. houstoni*) or absent. Palpal bulb pyriform, apically twisted with one to several large keels or also with many small ridges. Males with distinct (most species) or weak (*S. lowei*, *S. yundamindra*) excavation retrolaterally on cymbium.

#### TYPE SPECIES

*Synothele michaelsoni* Simon, 1908, by monotypy.

#### DISTRIBUTION

*Synothele* is known from WA in a broad latitudinal band east of Perth, Denmark and the Recherche Archipelago, in the far south, and from Barrow Island and at Karara Well, just



north-west of central WA. It also occurs at Koonalda, Ooldea and Moonabie in SA. A juvenile from Reevesby Island (MV K2204), SA, may also belong to the genus.

#### REMARKS

Presumably, *Synothele* is widespread throughout WA and SA and the paucity of material from the great Karri forests south and south east of Perth reflects only poor collections from the region. The diversity of species from the sampled zone and the lack of systematic studies on this and many other spider groups in Western Australia suggest that many species of spiders in the state are already endangered through being unknown. More support is required for systematic collecting and research on spiders of Western Australia to document the rich biodiversity of the region.

A ♂ in the WAM collection has extensive grooves over most of the palpal bulb but is badly damaged and lacks the first legs. Hence, no description is given.

A barychelid lacking PMS but having large paired claws in the ♀ is here placed in *Ozicrypta*, *O. australoborealis*. Data from a ♂ (now unknown) of this species may require its transfer to *Synothele*. Similarly, *S. pectinata*, from the Goldfields, may be better placed in *Ozicrypta* because it has normal (equally sized) claws in the ♀. It is included in *Synothele* because the claws are considered to be apomorphically large by reversal; its similarities in other characters are clearly with *Synothele*.

#### INCLUDED SPECIES

*Synothele arrakis* sp. nov.  
*Synothele boongaree* sp. nov.  
*Synothele butleri* sp. nov.  
*Synothele durokoppin* sp. nov.  
*Synothele goongarrie* sp. nov.  
*Synothele harveyi* Churchill & Raven, sp. nov.  
*Synothele houstoni* sp. nov.  
*Synothele hawi* sp. nov.  
*Synothele karara* sp. nov.  
*Synothele koonalda* sp. nov.  
*Synothele longbottomi* sp. nov.  
*Synothele lowei* sp. nov.  
*Synothele meadhunteri* sp. nov.  
*Synothele michaelsoni* Simon, 1908  
*Synothele moonabie* sp. nov.  
*Synothele mullaloo* sp. nov.  
*Synothele ooldea* sp. nov.  
*Eneyocrypta parifusca* Main, 1954  
*Synothele pectinata* sp. nov.  
*Synothele rastelloides* sp. nov.  
*Synothele rubripes* sp. nov.

*Synothele subquadrata* sp. nov.  
*Synothele taurus* sp. nov.  
*Synothele yundamindra* sp. nov.

#### KEY TO *SYNOTHELE*, *AURECOCRYPTA*, AND SIMILAR *OZICRYPTA* OF WESTERN AUSTRALIA AND NORTHERN TERRITORY

Note: The size of the posterior median spinnerets is used sparingly in the key because in some cases it is very difficult to distinguish the minute spinnerets from folds in the cuticle of the area.

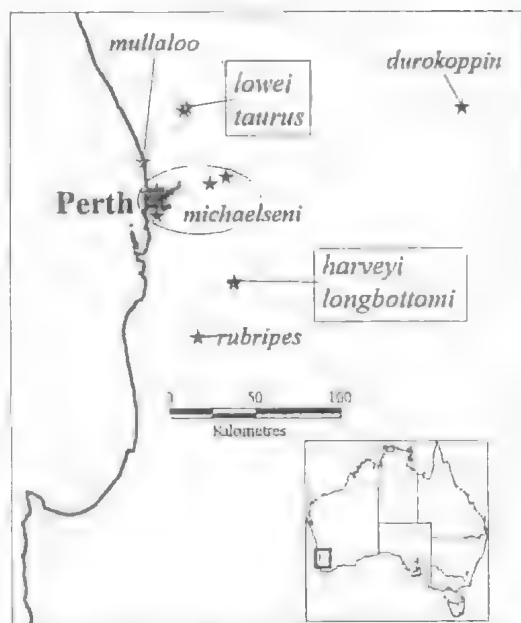
#### MALES

1. Posterior median spinnerets minute or absent (Figs 137C, 139E) . . . . . 2  
 Posterior median spinnerets small (Fig. 146D) . . . . . *S. rubripes*
- 2(1). Claws of leg IV bare . . . . . 3  
 Claws of leg IV dentate . . . . . 8
- 3(2). Prolateral face of tibia I without upper megaspine (Fig. 137G) . . . . . 4  
 Prolateral face of tibia I with upper megaspine (Fig. 129G) . . . . . 6
- 4(3). Palpal bulb tapers quickly to embolus with one keel (Fig. 137I); claws of leg I with 2 rows of teeth . . . . . *S. lowei*  
 Palpal bulb tapers gradually until just before tip; two long keels and many finer ridges (Fig. 139I); claws of leg I without teeth . . . . . 5
- 5(4). No rastellum or preening combs; intercheliceral tumescence indistinct . . . . . *S. yundamindra*  
 Rastellum a low mound, preening combs present; intercheliceral tumescence pallid, setose . . . . . *S. meadhunteri*
- 6(3). Microspur absent (Fig. 129G) . . . . . 7  
 Microspur present prolaterally on tibia I (Fig. 131K) . . . . . 13
- 7(6). Eye group square to subquadrate in shape (Fig. 129B); claws of leg I with two rows of teeth . . . . . *S. durokoppin*  
 Eye group long and clearly wider behind than in front; claws of leg I lack teeth . . . . . *S. arrakis*
- 8(2). Keel(s) on palpal bulb smooth (Fig. 126I, J) . . . . . 9  
 Keel on palpal bulb distinctly serrated (Figs 122, 141C) . . . . . 16
- 9(8). Claws with two rows of teeth . . . . . 10  
 Claws with one row of teeth . . . . . *S. boongaree*
- 10(9). Microspur present prolaterally on tibia I (Fig. 128H) . . . . . *S. butleri*  
 Microspur absent (Fig. 134G) . . . . . 11
- 11(10). Metatarsi I, II with a spine on retrolateral face . . . . . *S. karara*  
 Metatarsi I, II lack spine retrolaterally . . . . . 12

- 12(11). Rastellum a spinose mound (Fig. 133G); palpal bulb keels small (Fig. 133K) . . . . *S. howi*  
 Rastellum weak or absent; palpal bulb keels large, widening distal bulb (Fig. 135D) . . . . *S. koonalda*
- 13(6). Claws of leg I with one row of teeth . . . . 14  
 Claws of leg I without teeth . . . . 15
- 14(13). No posterior median spinnerets . . . *S. harveyi*  
 Posterior median spinnerets minute . . . . *S. longbottomi*
- 15(13). Eye group clearly longer than wide (Fig. 132E) . . . . *S. houstoni*  
 Eye group subquadrate to wider than long (Fig. 147A) . . . . *S. subquadrata*
- 16(8). Microspur present on prolateral face of tibia I (Fig. 141A) . . . . *S. mullaloo*  
 Microspur absent (Fig. 121F) . . . *S. michaelsoni*

## FEMALES

1. Posterior median spinnerets well developed (Fig. 25E) . . . . *Aureocrypta* . . . 2  
 Posterior median spinnerets minute or absent (Figs 123D) . . . . 3
- 2(1). Maxillary lyra present (Figs 23A-C); preening combs present . . . . *A. lugubris*  
 No lyra or preening combs . . . . *A. katersi*
- 3(2). Claws of legs I and IV without teeth . . . . 4  
 Claws of legs I or IV with teeth . . . . 7
- 4(3). Rastellum a very large spinose process (Fig. 145C); femur-patella III prolaterally with many conical spines . . . . *S. rastelloides*  
 Rastellum a low mound or absent (Fig. 144G); femur-patella III prolaterally with comb of conical setae . . . . 5
- 5(4). Basifemoral thorns present . . . . *S. lowei*  
 Basifemoral thorns absent . . . . 6
- 6(5). Anterior median eyes blue . . . . *S. arrakis*  
 Anterior median eyes green or brown . . . 12
- 7(3). Basifemoral thorns present . . . . 8  
 Basifemoral thorns absent . . . . 10
- 8(7). Claws on leg I much smaller than on IV (Fig. 16f); eye group very long (Fig. 123B) . . . . *S. michaelsoni*  
 Claws on leg I similar size to claws on IV; eye group shorter . . . . 9
- 9(8). Posterior lateral eyes similar size to posterior median eyes (Fig. 78A) . . . . *Ozicrypta australoborealis*  
 Posterior lateral eyes normal, clearly larger than posterior median eyes (Fig. 97f) . . . . *Ozicrypta noonamah*
- 10(7). Posterior median spinnerets absent . . . . 11  
 Posterior median spinnerets minute but evident (Fig. 143e) . . . . *S. parifusca*
- 11(10). Scopula for 2/3 of metatarsi I, 1/2 of II. . . . *S. pectinata*

FIG. 120. Records of *Synothele* in southwestern Australia.

- Scopula full on metatarsi I, II . . . *S. moonabie*
- 12(6). Basal femora I, II lack thorn setae dorsally . . . . *S. goongarrie*  
 Basal femora I, II with distinct thorn setae dorsally . . . . *S. ooldea*

***Synothele michaelsoni* Simon, 1908**  
 (Figs 4G, H, 12E, 13H, 14G, H, 16F, 20F, 120-123, Table 9)

*Synothele michaelsoni* Simon, 1908, p. 364; Rainbow, 1911, p. 116; Roewer, 1942, p. 218; Bonnet, 1958, p. 4225; Main, 1985, p. 13.

## MATERIAL EXAMINED

TYPE. Holotype ♂, Lion Mill [Mt Helena], site 99, 31°52'S 116°15'E, SW WA, 27 Aug 1905, Cat. no. 21021, ZMB, examined.

OTHER MATERIAL EXAMINED. ♀ (described), John Forrest National Park, 31°54'S 116°09'E, Oct 1971, GL, WAM 90/2009; ♀, Swanbourne, 31°59'S 115°45'E, 31 Mar 1980, R.E. Packington, WAM 89/312; ♂, Wembley, 4 May 1989, H. Mitchell, WAM 89/345; ♀, Bold Park (near Reabold Hill, 31°57'S 115°46'E.), 7 Dec 1988, Jiang Wang Gao, WAM 89/307; ♂, same locality, 31°57'07"S 115°45'30"E, May 1987, WFH et al., WAM 91/1429; ♂, same data but Mar 1987, WAM 91/1420; ♂, Murdoch University, Perth, 32°04'S 115°49'E, Apr 1988, DM, WAM 89/311; ♂, same data as WAM 89/311, 10 May 1984, WAM 89/310; ♀, Tenilba Park, 31°46'S 116°28'E, 9 May 1992, K. Aplin et al., WAM 92/291. All in SW WA.

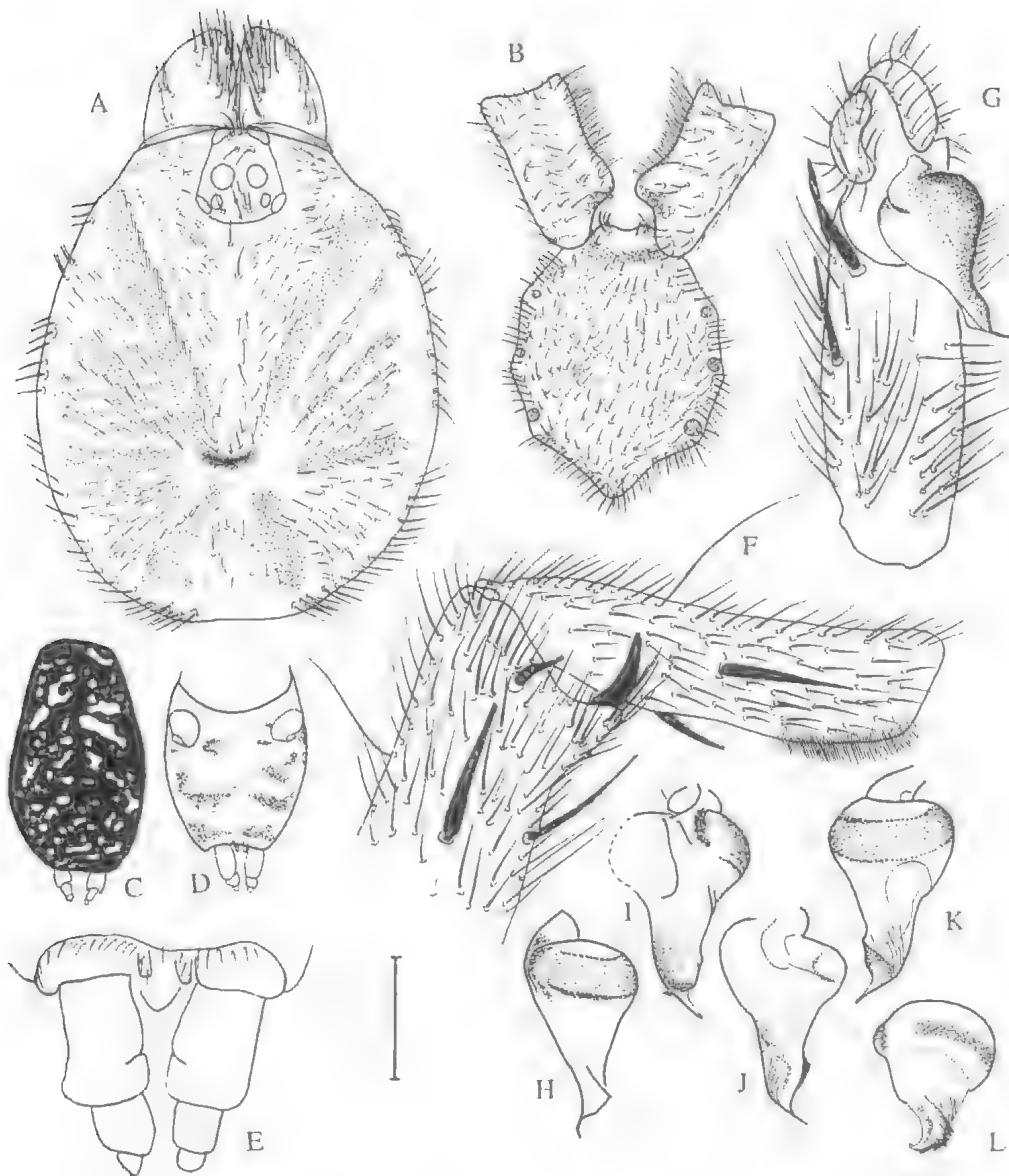


FIG. 121. *Synothele michaelsoni* Simon ♂ (Holotype, A-G, WAM89/345, H-L). A, carapace & chelicerae, dorsal view; B, sternum, maxillae & labium, ventral view; C, D, abdomen, dorsal view (C), ventral view (D); E, spinnerets, ventral view; F, tibia & metatarsus I, prolateral view; G, cymbium & palpal bulb, ventral view; H-L, palpal bulb, ventral (H), dorsal (I), prolateral (J), retrolateral (K) & posterior view (L). Scale line = 1 mm (A, B); 2 mm (C, D); 0.5 mm (E-L).

#### DIAGNOSIS

Males differ from those of *S. lowei* in the much longer eye group and from *S. mullaloo* in lacking a tibial microspur and intercheliceral tumes-

cence. Females differ from those of *S. parifusca* in having basifemoral thorns.

PMS minute. Rastellum absent. Eye group very long, quadrangular. FEMALES. Teeth on all paired claws; claws on I about half size of leg IV

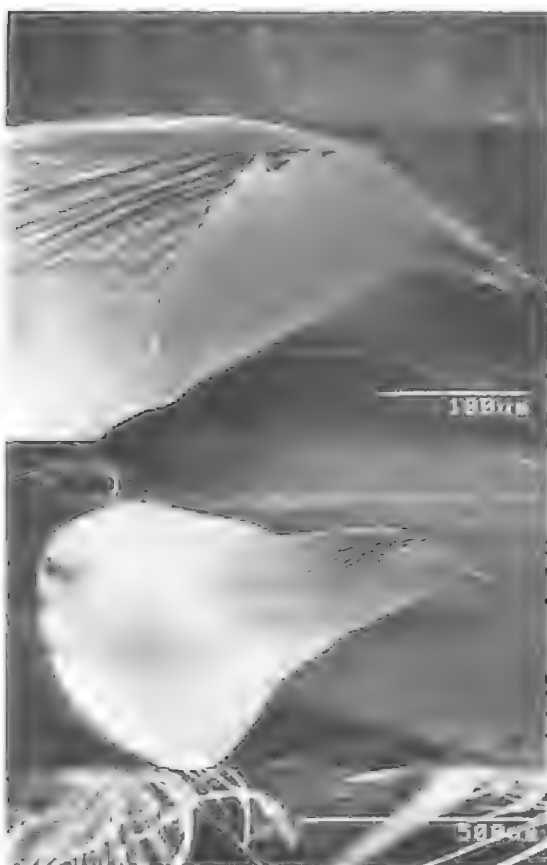


FIG. 122. Scanning Electron Micrograph, ♂ palpal tibia, cymbium & bulb, *Synothele michaelsoni*.

claws. Basifemoral thorns present. Femora-patellae III prolaterally only with conical setae. Scopula in distal 1/5 of metatarsi III. Preening combs present. Spermathecae two, each a broad low plateau-like mound with longer broad lobe ectally. MALES. One row of teeth on claws of I, IV. Tibia I with short conical spur; prolateral megaspine present, microspur absent. Bulb with small serrated keels on embolus. Intercheliceral tumescence absent.

#### DESCRIPTION

##### HOLOTYPE MALE ZMB

Carapace 4.08 long, 3.16 wide. Abdomen 4.01 long, 2.30 wide. Total length, 9.

**Colour.** Carapace, legs and chelicerae orange brown; dorsal abdomen brown with white mottling forming about 8 narrow chevrons; ventral abdomen white with brown mottling in front of PLS, longitudinally and behind posterior book-lungs.

**Carapace.** Uniform cover of distinct black bristles and some fine brown hairs. Lateral margins with bristles criss-crossing. Bristles: 3 foveal pairs; 4-5 long between PME; 3 long curved on clypeal edge; a line of c.6 anteromedial; 5 thick between PME. Fovea short, slightly procurved; caput low. Striae distinct, glabrous.

**Eyes.** Group occupies 0.38 of head-width; front width, back width, length, 32, 48, 46, respectively. Back row slightly recurved, MOQ front width, back width, length, 30, 35, 25, respectively. AME:ALE:PME:PLE, 12:13:8:12. Eye interspaces: AME-AME, 0.7; AME-ALE, 1.0; ALE-PLE, 2.1; PME-PME, 1.6; PME-PLE, 0.1; ALE-ALE, 0.4.

**Chelicerae.** Furrow promargin with 8 teeth, basomesally no granules discernible. Intercheliceral tumescence absent.

**Labium.** 0.64 wide, 0.23 long.

**Maxillae.** 1.06 long in front, 1.52 long behind, 0.68 wide. With 13 blunt cuspules on inner angle. Heel distinctly produced.

**Sternum.** 2.12 long, 1.71 wide. All sigilla oval and touching margin; from 0.09-0.12 long. Sternum flat with narrow declivous edges.

**Legs.** Tibia I with prolateroventral distal spur with short curved megaspine, and downcurved complementary spine dorsal of megaspine; microspur absent; metatarsi I with long prolateral spine. Preening combs each of 3 setae, retroventrally on III, IV.

**Scopula.** Entire on tarsi I, II, and distal palpal tarsi; thin and divided on tarsi III and IV; divided in distal 1/4 of metatarsi I, II; scattered erect hairs distally on metatarsi III, IV.

**Spines.** I: fe, p1, d3; pa, 0; ti, p1, v4 + 2 megaspines; me, p1, v1. II: fe, p1, d4; pa, 0; ti, p2, v5; me, p1, v1. III: fe, p2, d2, r2; pa, p1, r1; ti, p2, d1, r2, v7; me, p2, r4, v6. IV: fe, d4, r2; pa, r1; ti, p2, d1, r3, v9; me, p4, r5, v10. Palp: fe, p1, d5; pa, 0; ti, p1, v2.

**Claws.** Distinctly smaller than tufts and with 5 teeth in one row on leg I and as high as tufts with 3 teeth in one row on leg IV. Claw tufts so thick as to obscure claws laterally and ventrally.

**Trichobothria.** c.10 in each of two rows on tibiae; c.10 in curving line on metatarsi; broad band of 20 filiform on tarsi.

**Spinnerets.** PMS minute, 0.11 long, 0.05 wide, 0.08 apart. Basal, middle, apical, total articles of PLS, 0.49, 0.21, 0.08, 0.78, respectively.

**Palp.** Bulb pyriform with twisted embolus with distal flange; embolus distally serrated.

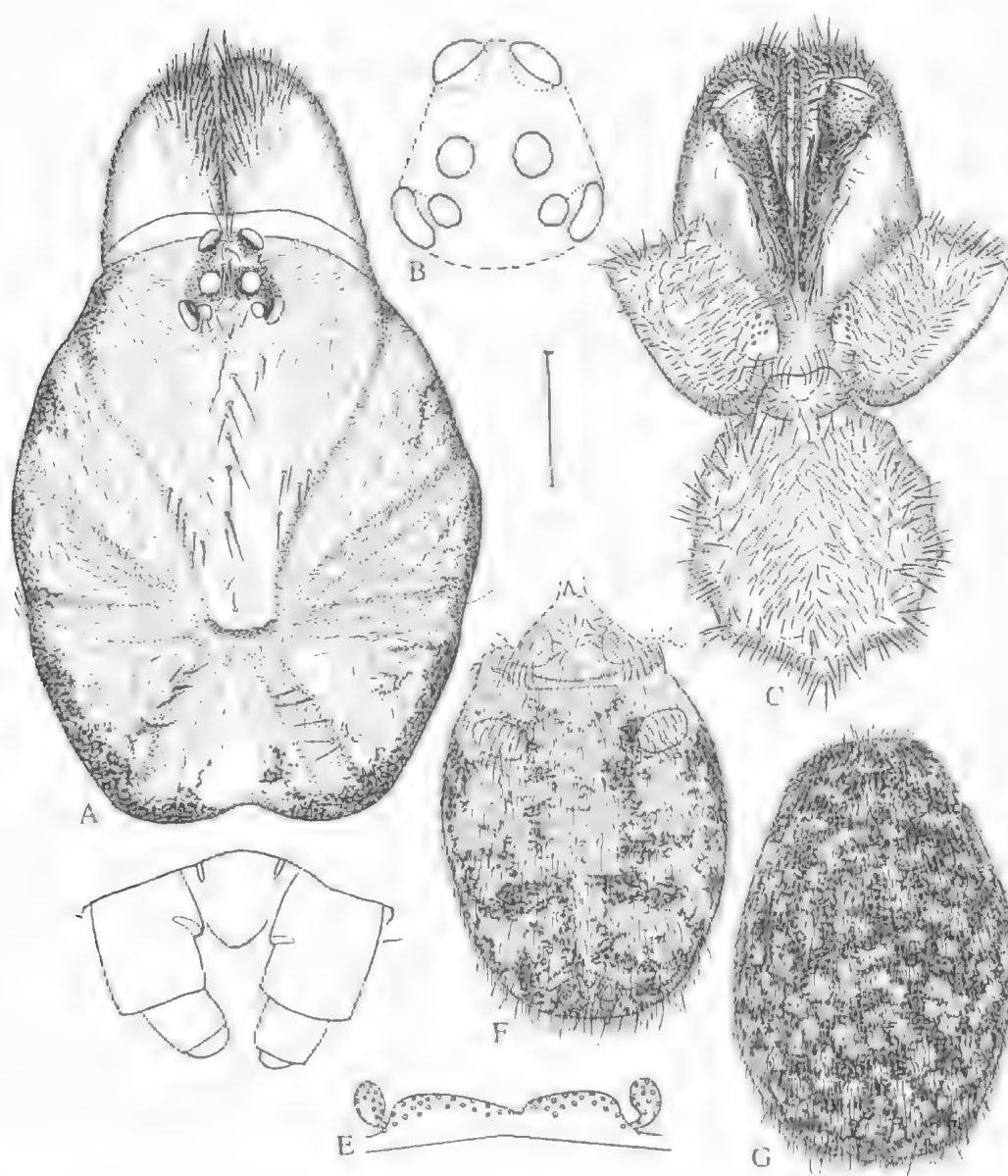


FIG. 123. *Synothele michaelsoni* Simon, ♀ (WAM 90/2009). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, sternum, maxillae, labium & chelicerae, ventral view; D, spinnerets, ventral view; E, spermathecae; F, G, abdomen, dorsal (G), ventral view (F). Scale line = 1 mm (A, C); 2 mm (F, G); 0.5 mm (B, D); 0.35 (E).

#### FEMALE WAM 90/2009

Carapace 4.32 long, 3.44 wide. Abdomen 6.80 long, 4.68 wide. Total length, 12.

**Colour.** Carapace orange brown with darker areas along margins and in reticulated bands on interstrial ridges, chelicerae orange brown, legs orange brown, not annulated. Abdomen dorsally brown with large uniformly placed white spots

forming no regular pattern; ventrally pallid with broken brown areas medially and posteriorly.

**Carapace.** Pilosity: uniform light cover of fine brown hairs on caput and interstrial ridges; striae shallow, indistinct, narrow. Bristles: c.3 fine erect black beside posterior striae; one foveal pair; c.8 thicker anteromedially and some long slender beside caput; 4 long and 6-8 finer between PME,

and 2 long thicker and 10-12 finer between ALE; single sparse line of long hairs on lateral margins. Fovea short, procurved.

**Eyes.** Tubercle forms low longitudinal ridge, lateral boundary gradual. Group long, occupies 0.26 of head-width. Back row recurved. Eye group front width, back width, length, 20, 33, 31, respectively, MOQ front width, back width, length, 20, 22, 15, respectively. AME:ALE:PME:PLE, 8:10:6:10. Eye interspaces: AME-AME, 0.5; AME-ALE, 1.0; ALE-PLE, 2.0; PME-PME, 1.4; PME-PLE, 0.1; ALE-ALE, 0.5.

**Chelicerae.** Narrow band of few long and many short bristles prodorsally, laterally a narrow sparse band of short fine setae. Rastellum absent, mound low with several short curved bristles overhanging fang. Furrow promargin with 5 spaced teeth, basomesally with 2 small teeth and 7-10 granules.

**Labium.** 0.33 long, 0.73 wide. Labiosternal suture a wide shallow groove.

**Maxillae.** Ventral surface noticeably flat; 1.20 long in front, 1.75 long behind, 0.80 wide; with c.14 cuspules in inner angle. Heel broad; anterior lobe indistinct.

**Sternum.** 2.27 long, 1.95 wide. Sigilla all small, oval, marginal.

**Legs.** 2-3 basifemoral thorns dorsally on I-IV. Thorn spines absent but adjacent prolateral face of femur-patella III with many short conical setae. Preening combs: 1 of 3-4 setae on retroventral III, IV.

	I	II	III	IV	Palp
Femur	2.35	2.13	2.05	2.95	2.00
Patella	1.85	1.68	1.40	1.65	1.33
Tibia	1.60	1.43	1.30	2.20	1.00
Metatarsus	1.08	1.05	1.40	2.45	-
Tarsus	0.85	0.93	0.90	1.05	1.00
Total	7.73	7.22	7.05	10.30	5.33

**Scopula.** Metatarsi: I, II, thin, in distal 2/3, divided by setal band 2-3 wide; III, IV, two narrow sparse triangles in distal 1/5. Tarsi: I, II, full, thin, short, divided by narrow setal band 2-4 wide; III, IV, long hairs, thin, divided by setal band 6-8 wide.

**Spines.** Long slender spine-like bristle basally on all femora. I: fe p1, pa 0, ti 0, me 0. II: fe p1, pa 0, ti 0, me v1 basal. III: fe r1 + lw, pa p2 r1, ti p1, r2, v6, me p2, r2, v6. IV: fe r1, pa r1, ti p1, r2, v8, me p3, r4, v9. Palp: fe p1, pa 0, ti v3.

**Claws.** Hidden deep within small tufts on I, c. half size of leg IV claws. 1 small tooth on medial keel of very small claws of 0-1 teeth on medial keel of normal sized claws of IV; palpal claw very small, bare.

**Trichobothria.** Two rows, each of c.10 for length of tibiae; c.12 on metatarsi in curving row; c.3 minute slender clavate and c.10 filiform on tarsi.

**Spermathecae.** Two, each a broad low plateau-like mound with longer broad lobe ectally.

**Spinnerets.** PMS minute, hidden by posterior fold, 0.05 long, 0.03 wide, 0.25 apart, about 0.06 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 0.55, 0.45, 0.08, 1.08 long, respectively.

#### DISTRIBUTION

Darling Ranges (Mt Helena, John Forrest National Park, and the Swan Coastal Plain, Perth (all other localities), SW WA.

#### REMARKS

Larger ♀♀ (carapace length = 7 mm; WAM 89/312, 89/307) have the same abdominal pattern dorsally and ventrally but slightly different eye group shapes. Without a better series from one locality the significance of that eye group shape variation is unclear and is considered intraspecific.

#### *Synothele arrakis* sp. nov. (Figs 119, 124, 125, Table 9)

#### MATERIAL EXAMINED

**TYPES.** Buningonia Springs, WA. Holotype ♂, site BSR 8, 31°26'S 123°31'E, WFH et al., 14-18 Aug 1980, Mallee/Shrub, WAM 83/138; allotype ♀, well site BSR2, c.6.5 km SE, 31°26'S 123°33'E, 18-25 Nov 1978, TH et al., WAM 83/594; paratype ♀, site BSR 8, 31°26'35"S 123°31'40"E, taken in pitfall in Mallee scrub, 4-7 Apr 1981, WFH et al., WAM 85/676.

#### DIAGNOSIS

Males differ from those of *S. harveyi* in lacking a microspur; ♀♀ are unusual in the blue anterior median eyes.

PMS minute to absent. Rastellum a low weakly spinose mound. Eye group moderately long, slightly wider behind than in front. **FEMALES.** All paired claws bare; claws of I much smaller than those of IV. Basifemoral thorns absent. Femora-patellae III prolaterally only with conical setae. Scopula divided, only in distal 1/5 or less of metatarsi III. Preening combs present. Spermathecae two, each a broad triangular mound with stout ectal lobe. **MALES.** No teeth on claws on I, IV. Tibia I with low conical spur and long apical megaspine; prolateral megaspine short, curved; microspur absent. Bulb a long broad cone with many fine parallel grooves in distal two-



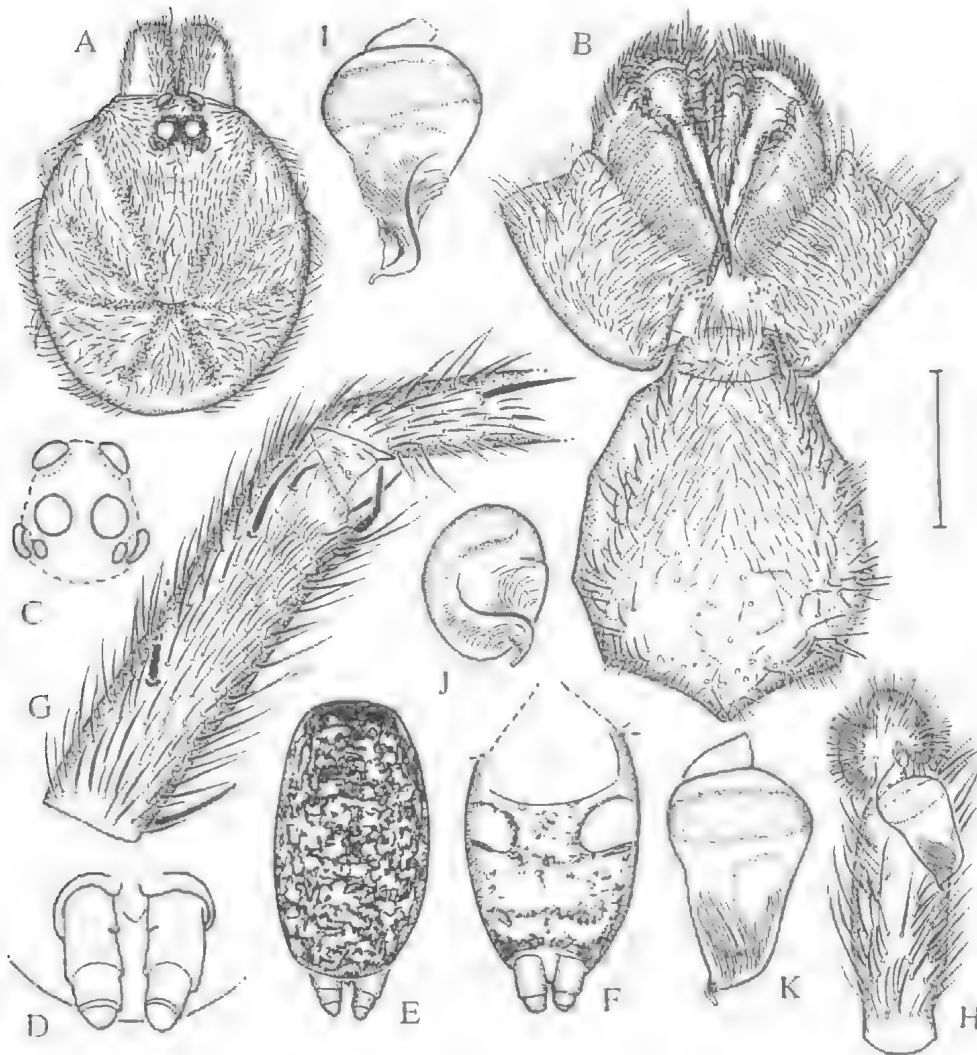


FIG. 124. *Synothele arrakis* sp. nov., holotype ♂ (WAM83/138). A, carapace & chelicerae, dorsal view; B, chelicerae, sternum, maxillae & labium, ventral view; C, eye group, dorsal view; D, spinnerets, ventral view; E, F, abdomen, dorsal (E), ventral view (F); G, tibia & metatarsus I, prolateral view; H, cymbium & palpal bulb, ventral view; I-K, palpal bulb, retrolateral (I), posterior (J), ventral (K). Scale line = 2mm (A, E, F); 1mm (B-D, G, H); 0.5mm (I-K).

thirds leading to short hooked embolus, inner edge of bulb with long distinct keel. Intercheliceral tumescence small, pallid setose. Scopulate area of metatarsi and tarsi I, II incrassate, pallid.

#### ETYMOLOGY

A noun taken from the Frank Herbert novel, *Dune*, in which the desert planet is known as Arrakis. Sands of the desert planet yield a 'spice' which changes the eye colour in users to deep

blue. The anterior median eyes of the types have a deep blue colour, unusual in spider eyes.

#### DESCRIPTION

##### HOLOTYPE MALE WAM 83/138

Carapace 4.60 long, 3.88 wide. Abdomen 4.00 long, 2.40 wide. Total length, 9.

*Colour.* Carapace yellow brown with brown triangular areas on caput, chelicerae and legs yellow brown, not annulated. Abdomen dorsally brown with irregular small mottled areas forming

no evident pattern; ventrally pallid with thin brown line edging posterior booklung covers, irregularly defined brown band in front of spinnerets, and thin band in front of that.

**Carapace.** Pilosity: light cover of moderately long fine brown bristles and of fine wavy brown hairs; anterior striae only distinct, narrow. Bristles: line of c.8 erect black beside posterior striae; 14 anteromedially, 10 directed posteriorly, and few thinner in band beside caput; 5 long thick and few finer between PME, and 8 long thick and c.4 finer between ALE; long golden brown hairs and long curved brown bristles on lateral margins. Fovea short, procurved.

**Eyes.** Tubercle distinct. Group occupies 0.34 of head-width; front width, back width, length, 26, 37, 32, respectively. Back row procurved. MOQ front width, back width, length, 25, 26, 20, respectively. AME:ALE:PME:PLE, 12:10:7:11. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.7; ALE-PLE, 1.3; PME-PME, 1.4; PME-PLE, 0; ALE-ALE, 0.8.

**Chelicerae.** With moderately long brown bristles in wide band prodorsally, laterally with shorter hairs and bristles. Rastellum a low but distinct mound on inner edge with 3-4 short thin curved spines and 4-6 thinner spines laterally. Intercheliceral tumescence a small pallid setose area. Furrow promargin with 6 small spaced teeth, basomesally with few small granules.

**Labium.** 0.30 long, 0.70 wide. Labiosternal suture a wide shallow groove.

**Maxillae.** 1.20 long in front, 1.50 long behind, 0.70 wide; with 10-14 blunt cuspules in inner angle. Heel unmodified; anterior lobe distinct.

**Sternum.** 2.38 long, 2.00 wide. Sigilla all small, oval, marginal.

**Legs.** Tibia I with distal conical spur and slender upcurved megaspine; microspur absent, slender downcurved megaspine prolaterally. Preening combs are only weak grouped setae on retroventral III, IV. Thorn spines absent but cluster of strong setae distally on prolateral femora IV. Scopulate areas pallid and collapsed with preservation, and on I, II incrassate.

	I	II	III	IV	Palp
Femur	3.96	3.88	3.52	5.08	2.16
Patella	2.28	2.12	1.76	2.12	1.32
Tibia	3.12	2.84	2.48	4.08	1.52
Metatarsus	2.56	2.52	3.28	4.96	-
Tarsus	1.80	1.88	1.88	2.12	0.84
Total	13.72	13.24	12.92	18.36	5.84

**Scopula.** Metatarsi: I, II, in distal third, entirely ventral, hairs short, entire; III, small cluster in distal sixth, divided by setal band; IV, two narrow triangles in distal eighth. Tarsi: I, II, full, hairs

short, entire; III, probably divided by setal band; IV, thin, divided by setal band 4-6 wide.

**Spines.** I: fe p1, d4, pa 0, ti p2 + megaspine, v4 + megaspine, me p1. II: fe p2, d3, pa 0, ti p1, v5, me p2, III: fe p3, d3, r3, pa p1, r1, v2, ti p2, d1, r2, v9, me p5, r3, v6. IV: fe p1, d4, r3, pa r1, v1, ti p2, r3, v6, me p5, d1, r6, v10. Palp: fe p1, d2, pa 0, ti p1.

**Claws.** All claws bare, claws on leg I much smaller than tufts, on IV about equal size.

**Trichobothria.** Two rows, each of c.7 for half length of tibiae; c.7 in cluster on metatarsi in distal quarter on legs I, II, in long curving row on III, IV; c.15 filiform on tarsi, none clavate.

**Palp.** Bulb a long broad cone with many fine parallel grooves in distal two-thirds leading to short hooked embolus, inner edge of bulb with long distinct keel; retrolateral face of cymbium straight to slightly concave.

**Spinnerets.** PMS not evident. Basal, middle, apical, total segments of PLS, 0.53, 0.18, 0.08, 0.79 long, respectively.

#### ALLOTYPE FEMALE WAM 83/594

Carapace 5.63 long, 4.69 wide. Abdomen 8.44 long, 6.88 wide. Total length, 16.

**Colour.** Carapace, chelicerae, and legs yellow brown, not annulated; anterior median eyes deep sky blue. Abdomen dorsally yellow brown with faint indication of darker pigmentation medially; ventrally yellow brown. Paratype ♀: abdomen dorsally brown with small white spots forming no distinct pattern; ventrally pallid with small transverse brown areas centrally and in front of spinnerets.

**Carapace.** Pilosity: fine brown hairs uniformly over caput and in many lines on interstrial ridges; anterior striae distinct, narrow. Bristles: none thicker on thoracic portion; 12 long thick erect in 1-2 lines anteromedially with 4-6 shorter but thick in band beside caput; 4 long thick and few finer between PME, and 9 long thick and 2-4 finer between ALE; short fine hairs on lateral margins. Caput distinctly raised. Fovea of medium width, procurved.

**Eyes.** Tubercle lateral margins indistinct, centrally high so AME on slope. Group occupies 0.25 of head-width; front width, back width, length, 34, 47, 43, respectively. Back row recurved. MOQ front width, back width, length, 30, 31, 25, respectively. AME:ALE:PME:PLE, 13:11:7:13. Eye interspaces: AME-AME, 0.8; AME-ALE, 1.0; ALE-PLE, 1.7; PME-PME, 1.5; PME-PLE, 0.3; ALE-ALE, 1.1.

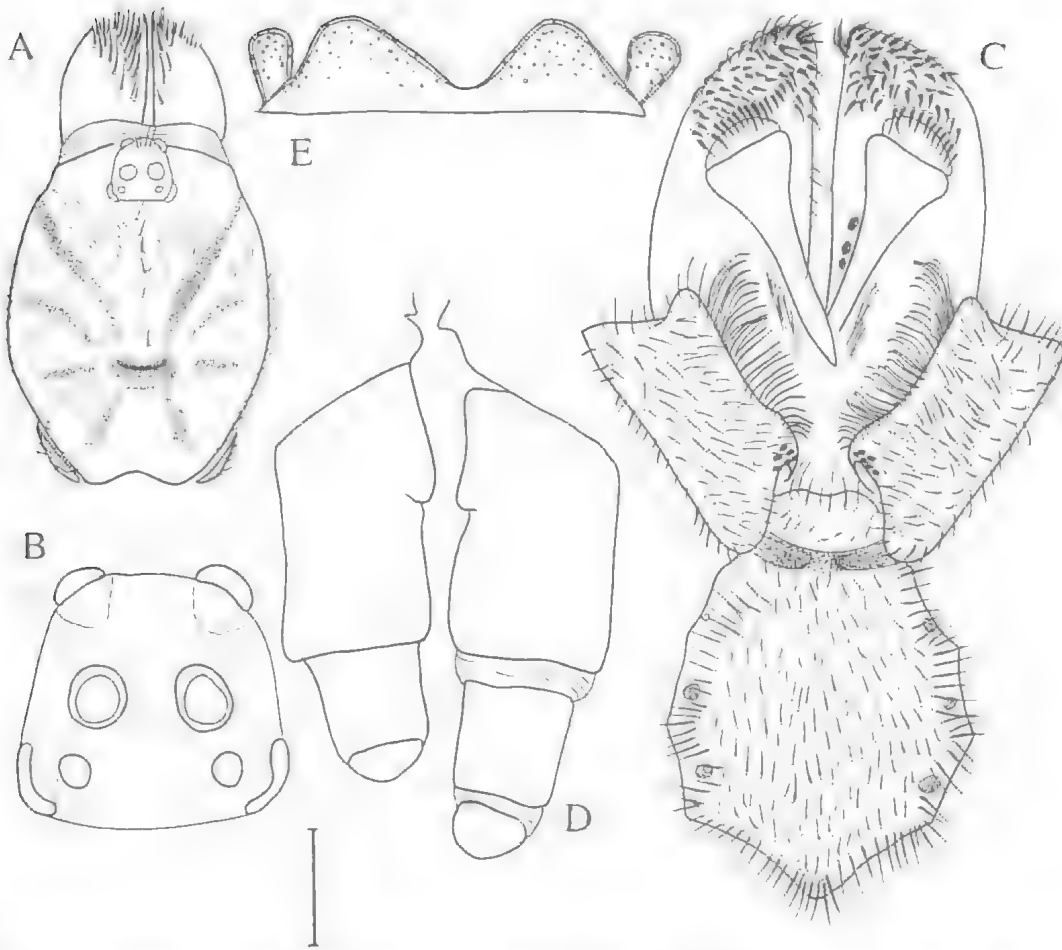


FIG. 125. *Synothele arrakis* sp. nov., allotype ♀ (WAM83/594). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, chelicerae, sternum, maxillae & labium, ventral view; D, spinnerets, ventral view; E, spermathecae. Scale line = 2mm (A); 0.5mm (B, D); 1mm (C); 0.25 (E).

**Chelicerae.** 10-15 long and many short bristles in wide band prodorsally, laterally wide band of short setae. Rastellum a distinct broad mound with many short thick curved spinelike bristles on triangle across lower front face of chelicera. Furrow promargin short with 6 thick spaced teeth, basomesally with 10 small granules.

**Labium.** 0.52 long, 1.08 wide. Labiosternal suture a groove including two separated sigilla.

**Maxillae.** 1.60 long in front, 2.40 long behind, 1.04 wide; with 7-10 thick cuspules clustered in inner angle. Heel broad; anterior lobe distinct. Lyra entirely absent but two distinct thornlike setae on upper front face.

**Sternum.** 3.12 long, 2.52 wide. Margins with strong erect bristles. Sigilla all small, oval, marginal; posterior pair in distinct broad depression.

	I	II	III	IV	Palp
Femur	2.88	2.94	3.06	4.13	2.31
Patella	2.31	2.19	2.06	2.69	1.63
Tibia	1.94	1.75	1.69	3.06	1.38
Metatarsus	1.50	1.56	1.94	3.50	-
Tarsus	1.19	1.25	1.25	1.56	1.25
Total	9.82	9.69	10.00	14.94	6.57

**Legs.** Basifemoral thorns absent. One thorn spine on patella III, but strong setal combs on edges of femora III, IV, and many short strong setae on prolateral face of patellae III, IV. Preening combs: 1 of 2 weakly paired setae on retroventral III, IV. Tarsi III, IV, incrassate for distal 3/4.

**Scopula.** Metatarsi: I, II, thin, divided in distal two-thirds (I) to half (II); III, IV, absent. Tarsi: I, II, full, dense, entire, save for few setae in line on

II, III, divided by wide setal band 8-10 wide; IV, reduced to two lateral bands.

*Spines.* I: fe p1, d4w, pa 0, ti 0, me 0. II: fe p1, pa 0, ti 0, me 0. III: fe 0, pa p1, ti r2, v6, me p2, r3, v8. IV: fe r1, pa 0, ti r3, v11, me p2, r3, v13. Palp: fe 0, pa 0, ti p2, v3.

*Claws.* All claws bare; claws on leg I minute about one quarter as high as tufts; leg I tufts similar in size to leg IV; leg IV claws long, visible above tufts; palpal claw very small and bare also.

*Trichobothria.* Two rows, each of c.10 for half length of tibiae; c.16 on metatarsi in curving row; c.2 small clavate and c.17 filiform on tarsi.

*Spermathecae.* Two, each a broad triangular mound with stout setal lobe.

*Spinnerets.* PMS two very low teats with cluster of setae; basal, middle, apical, total segments of PLS, 0.75, 0.28, 0.15, 1.18 long, respectively.

#### DISTRIBUTION & HABITAT

Buningonia Springs, WA, in Mallee scrub.

#### *Synothele boongaree* sp. nov.

(Figs 119, 126, Table 9)

#### MATERIAL EXAMINED

TYPE. Holotype ♂, 18.3km N of Mt Knight (Site 12/1), Boongaree Is., 15°04'30"S 125°11'05"E, WA, 12 Jun 1988, A.R. Main, (BYM 1988/K173), WAM 92/289.

#### DIAGNOSIS

Males differ from those of most other species by the single row of teeth on the claws of leg IV and from *S. michaelseni* and *S. mullaloo* in the smooth keels on the palpal bulb.

PMS absent. Rastellum absent. FEMALES. Unknown. MALES. One (I, IV) or two (I) rows of teeth on claws, Tibia I with strong distal ventral spur and megaspine; microspur a vestigial 'pimple'; metatarsi I, II distally incrassate and pallid. Bulb stout, pyriform with c.10-15 fine keels joining 3 high apically confluent keels at short twisted embolus; retrolateral face of cymbium slightly concave.

#### ETYMOLOGY

From the native name of the island.

#### DESCRIPTION

HOLOTYPE MALE WAM 92/289

Carapace 7.33 long, 6.00 wide. Abdomen 7.33 long, 4.67 wide. Total length, 15.

*Colour.* Carapace and chelicerae dark reddish brown, legs basal articles red brown, distal articles paler, not annulated. Abdomen dorsally brown with many small fine pallid spots forming

faintly discernible brown chevrons posteriorly; ventrally pallid with small brown areas near posterior booklung covers, centrally and near spinnerets.

*Carapace.* Pilosity: uniform light pile of long fine golden hairs and strong black bristles; anterior striae, others indistinct, narrow. Bristles: c.5 thick erect black beside posterior striae; c.10-15 (Broken) anteromedially and 20-30 in band beside caput; c.3 long thick and several finer between PME, and 3 long thick and several finer between ALE; few long fine hairs and many bristles in single line on lateral margins. Fovea deep, slightly recurved, with pits laterally and centrally.

*Eyes.* Tubercle distinct. Group occupies 0.28 of head-width; front width, back width, length, 58, 80, 71, respectively. Back row slightly recurved. MOQ front width, back width, length, 52, 51, 37, respectively. AME:ALE:PME:PLE, 21:22:9:19. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.6; ALE-PLE, 1.8; PME-PME, 1.6; PME-PLE, 0.1; ALE-ALE, 0.7

*Chelicerae* (one removed). Long fine hairs and thick brown bristles in broad band prodorsally, laterally with two wide bands of hairs and setae. Rastellum and intercheliceral tumescence absent. Furrow promargin with 8-9 close teeth, basomesally without teeth or granules.

*Labium.* 0.44 long, 0.92 wide; uniformly hirsute, c.9 slightly thicker setae across midwidth, setae behind those thin not in line. Labiosternal suture a broad continuous groove.

*Maxillae.* 1.71 long in front, 2.19 long behind, 0.92 wide; with 7 blunt spaced cuspules in inner angle. Heel slightly produced; anterior lobe indistinct.

*Sternum.* 3.24 long, 2.89 wide. Sigilla: posterior small, oval, half a diameter from margin; others small, submarginal.

	I	II	III	IV	Palp
Femur	5.13	4.67	4.13	5.73	3.00
Patella	3.40	3.00	2.53	2.93	1.93
Tibia	4.07	3.53	2.93	4.93	1.80
Metatarsus	2.80	3.13	3.53	5.53	-
Tarsus	1.73	1.60	1.80	2.07	1.33
Total	17.13	15.93	14.92	21.19	8.06

*Legs.* Tibia I with strong distal ventral spur and strong megaspine; microspur a vestigial 'pimple', upper megaspine broken at base; distal 1/3 of metatarsi I, II ventrally incrassate and pallid. Thorn spines and preening combs absent. Prolateral faces of femora I, II yellow in basal 4/5 with short brown setae arising from raised brown bases and directly diagonally down, setation normal on prolateral palpal femora.

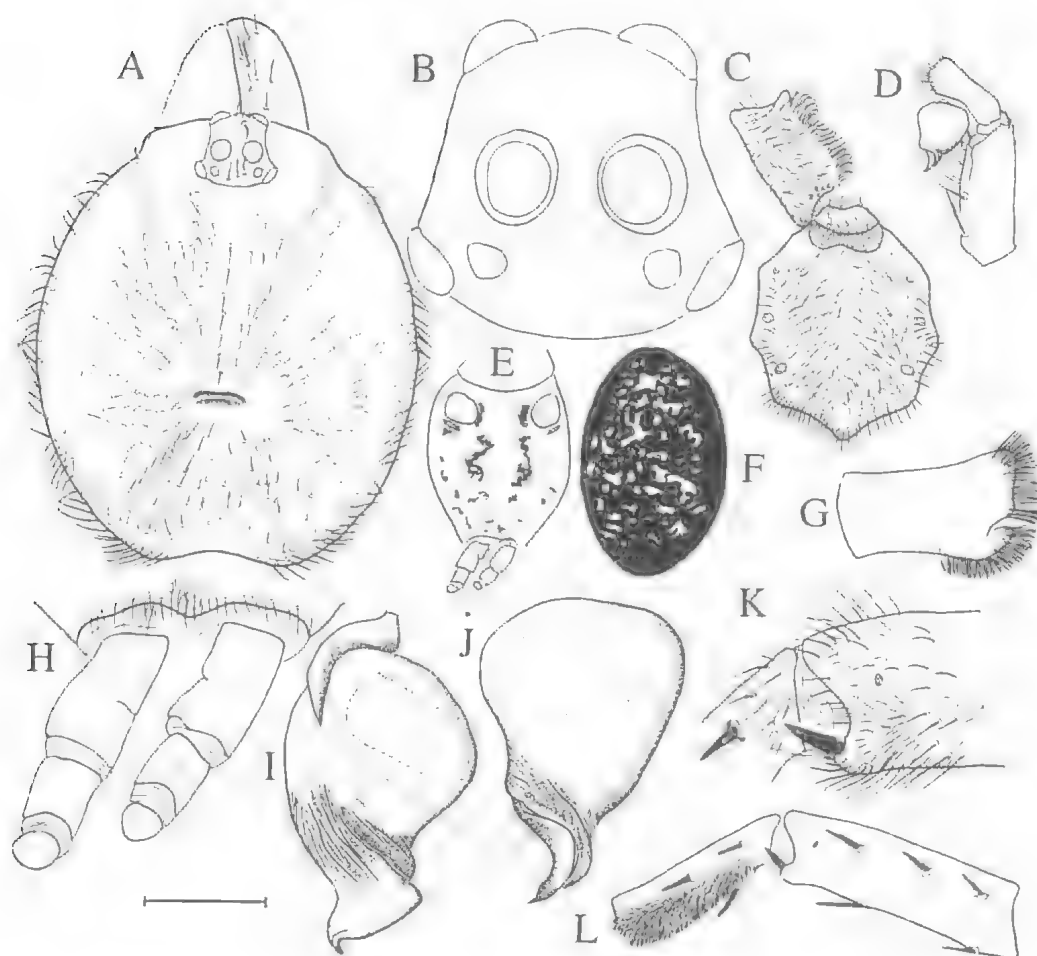


FIG. 126. *Synothele boongaree* sp. nov., holotype ♂ (WAM 92/289). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, sternum, maxillae & labium, ventral view; D, cymbium & bulb, retrolateral view; E, F, abdomen, dorsal (F), ventral view (E); G, cymbium, prolateral view; H, spinnerets, ventral view; I, palpal bulb, ventral view; J, palpal bulb, retrolateral view; K, tibial spur, prolateral view; L, tibia & metatarsus I, prolateral view. Scale line = 1mm (G, K); 2mm (A, C, L); 4mm (D-F); 0.5mm (B, H-J).

**Scopula.** Metatarsi: I, II, full, dense, entire; III, in distal 1/2, divided by bristles; IV, in distal 1/3, divided by bristles. Tarsi: I, II, full, dense, entire; III, divided by setal band 5-8 wide; IV, divided by setal band 6-10 wide.

**Spines.** I: fe p2, d4, r2, pa 0, ti p3 + megaspine, v5 + megaspine, me p2, v1 basal. II: fe p3, d4, r1, pa 0, ti p2, v8, me p2, v1 basal. III: fe p3, d3, r3, pa p1, v1, ti p2, d5, r3, v8, me p5, d5, r3, v8. IV: fe p2, d4, r2, pa p2, v2, ti p2, d4, r3, v8, me p3, d7, r4, v7. Palp: fe p1, d1, pa 0, ti p1, r1, v4.

**Claws.** 3-5 teeth in outer faces (I) and 0-2 small teeth medially (IV) on claws in 1 rows; all claws as high as tufts; tufts as high as tarsal diameter.

**Trichobothria.** Two rows, each of c.12 for length of tibiae; c. 15 on metatarsi in line curving in basal 1/6; c. 10-12 filiform on tarsi in two rows, clavates absent.

**Palp.** Bulb stout pyriform with c.10-15 fine keels in 2 groups from first constriction at half length of bulb joining 3 high apically confluent keels at short twisted embolus; cymbium divided in distal 1/5, apically tufted and pallid; retrolateral face of cymbium slightly concave.

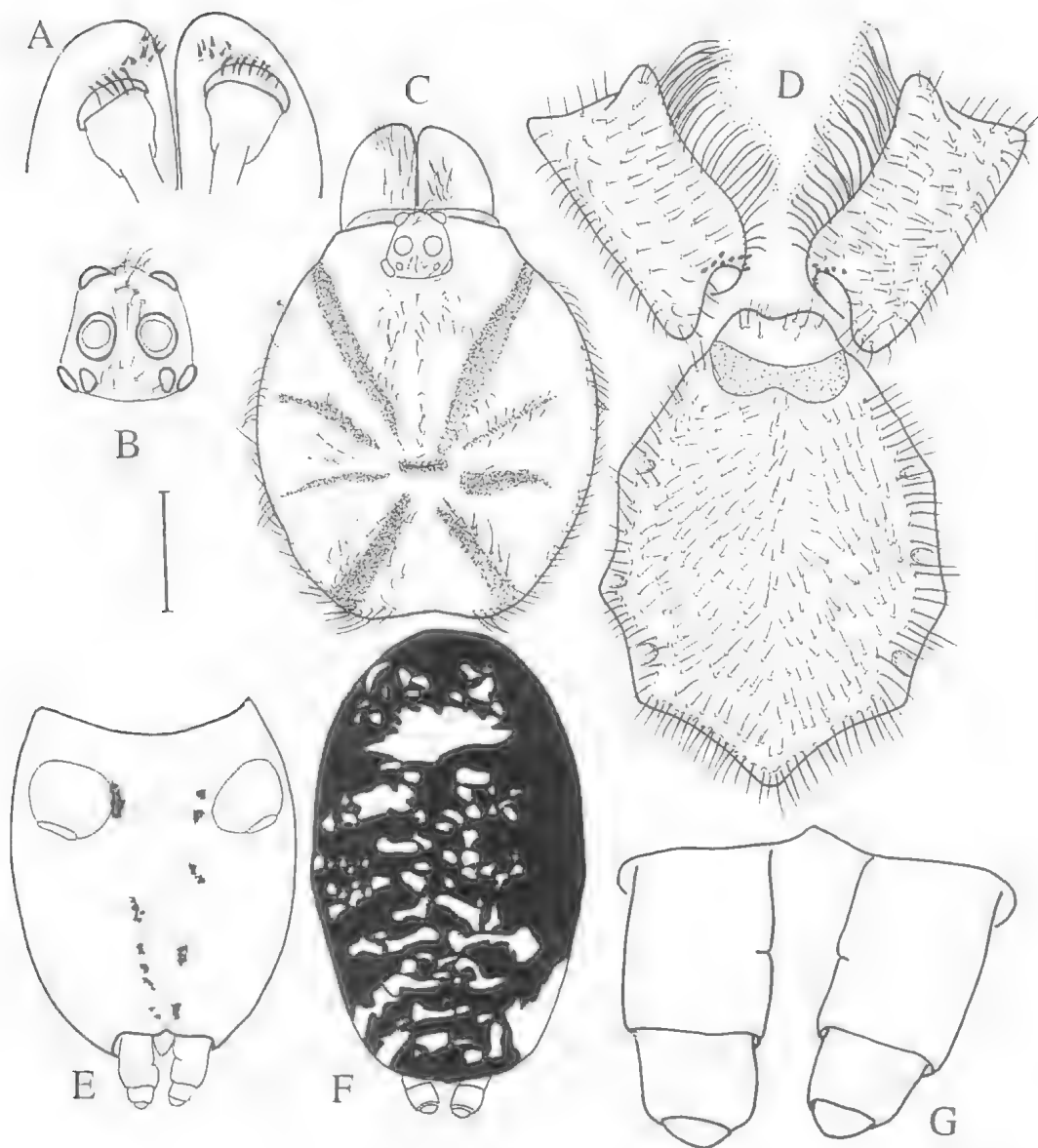


FIG. 127. *Synothele butleri* sp. nov., holotype ♂ (WAM 89/306). A, rastellum; B, eye group, dorsal view; C, carapace & chelicerae, dorsal view; D, sternum, maxillae & labium, ventral view; E, F, abdomen, ventral (E), dorsal view (F); G, spinnerets, ventral view. Scale line = 1mm (A, B, D); 2mm (C, E, F); 0.5mm (G).

*Spinnerets.* PMS absent without vestige. Basal, middle, apical, total segments of PLS, 0.92, 0.42, 0.29, 1.63 long, respectively.

***Synothele butleri* sp. nov.**  
(Figs 119, 127, 128. Table 9)

#### DISTRIBUTION & HABITAT

18.3k N of Mt Knight, Boongaree Is., northwest Western Australia.

#### MATERIAL EXAMINED

TYPE. Holotype ♂, Barrow Is., 20°48'S 115°24'E, WA, 23 May-14 Jun 1964, W. H. Butler, WAM 89/306.



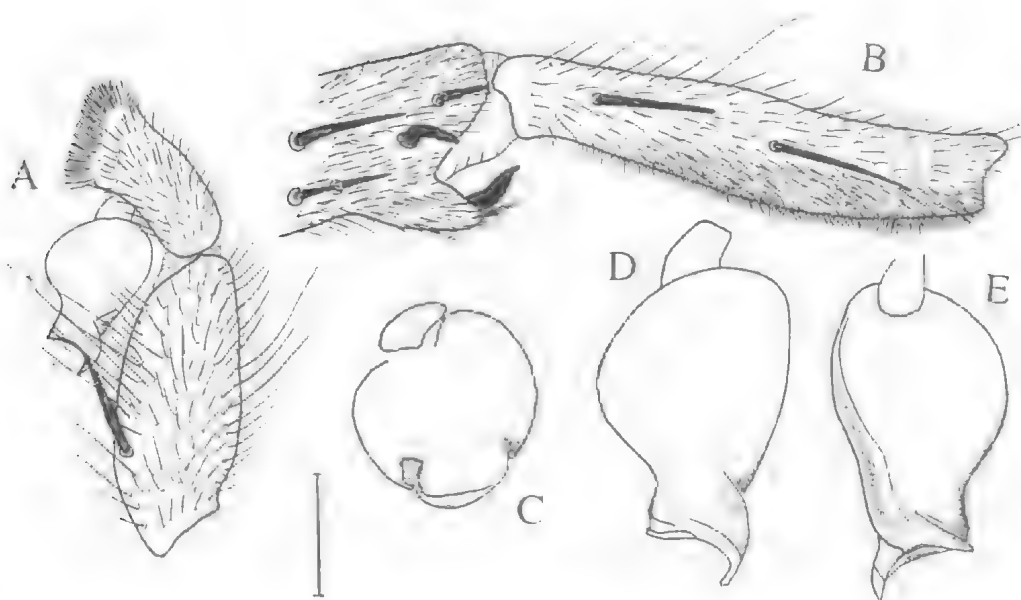


FIG 128. *Synothela butleri* sp. nov., holotype ♂ (WAM 89/306). A, cymbium & palpal bulb, prolateral views. B, tibia & metatarsus I, prolateral view; C-E, palpal bulb, posterior (C), ventral (D), prolateral views (E). Scale line = 1mm (A, B); 0.5mm (C-E).

#### DIAGNOSIS

Males differ from those of all other species in the combination of biserially dentate claws and a tibial microspur. The double concavity on the palpal bulb, and dorsal spines on tibiae and metatarsi III and IV are also unusual in this genus.

PMS absent. Rastellum a low spinose mound. Eye group long, slightly wider behind than in front. FEMALE. Unknown. MALES. Two rows of teeth on claws of legs I, III, and presumably IV. Tibia I with strong conical spur and stout apical megaspine; prolateral megaspine short, curved; microspur minute to absent. Bulb large with broad distal portion, concave groove on contra-tibial surface flanked by high and short keels; just above embolus another small concavity; embolus short, curved. Intercheliceral tumescence absent. Scopulate area of metatarsi I, II pallid and incrassate.

#### ETYMOLOGY

For W. Harry Butler, naturalist and television personality who has contributed much material to the Western Australian Museum.

#### DESCRIPTION

HOLOTYPE MALE WAM 89/306

Carapace 6.81 long, 5.69 wide. Abdomen 7.56 long, 4.44 wide. Total length, 15.

**Colour.** Carapace orange brown, caput darker, chelicerae dark orange brown, and legs orange brown, not annulated; tarsi red brown. Abdomen dorsally brown with fine white mottling forming three irregular broad brown chevrons posteriorly; ventrally entirely pallid save for few brown flecks in front of spinnerets.

**Carapace.** Pilosity: light pile of silver hairs and uniform cover of short strong black bristles; striae indistinct, narrow. Bristles: 7 longer and few shorter erect black beside posterior striae; 10-15 long, posteriorly directed anteromedially and few in band beside caput; 5 long thick between PME, and 8 long thick and 3-5 finer between ALE; light pile of short silver hairs and long curved black bristles on lateral margins. Fovea short, straight.

**Eyes.** Tubercle distinct. Group occupies 0.29 of head-width; front width, back width, length, 55, 75, 66, respectively. Back row straight. MOQ front width, back width, length, 55, 52, 41, respectively. AME:ALE:PME:PLE, 25:20:14:16. Eye interspaces: AME-AME, 0.3; AME-ALE, 0.6; ALE-PLE, 1.5; PME-PME, 1.4; PME-PLE, 0.1; ALE-ALE, 0.9.

**Chelicerae.** Broad band of long brown bristles and few silver hairs prodorsally, laterally a broad setose band. Rastellum a low but distinctly separated mound on inner corner bears 10 long conical spines set above fang edge, laterally a line

of c. 10 long curved bristles overhang fang. Intercheliceral tumescence absent. Furrow promargin with 8 spaced teeth, basomesally with c. 10 small granules.

*Labium*. 0.47 long, 1.06 wide. Labiosternal suture two broad sigilla touching medially.

*Maxillae*. 1.97 long in front, 2.50 long behind, 1.00 wide; with 5-10 blunt cuspules in inner angle. Heel produced; anterior lobe short, distinct.

*Sternum*. 3.22 long, 2.84 wide. Sigilla all small, oval, marginal.

*Legs*. Tibia I with distal spur with short horn-like curved megaspine; microspur a minute mound (effectively absent), set against strong curved horn-like megaspine prolaterally. Preclinging combs absent. Thorn spines absent but many short curved setae on femora and patellae III, IV at prolateral corner of joint. Scopulate surfaces of tarsi I-IV pallid; tarsi I, II ventrally collapsed. Scopulate area of metatarsi I, II pallid, incrassate.

	I	II	III	IV	Palp
Femur	5.50	5.25	4.81	6.13	3.00
Patella	3.25	3.00	2.50	2.94	1.88
Tibia	4.13	3.88	3.63	5.44	1.88
Metatarsus	3.94	3.94	4.63	6.56	-
Tarsus	2.00	2.06	2.06	2.25	1.50
Total	18.82	18.13	17.63	23.32	8.26

*Scopula*. Metatarsi: I, II, hairs short, full, dense for distal half, entire; III, in two wide triangles for distal third; IV, two narrow triangles for distal fifth. Tarsi: I, II, full, hairs short, moderately dense, entire, save for narrow medial band of setae; III, hairs long, divided by narrow setal band 3-6 wide; IV, divided by narrow setal band 8-12 wide, widens distally.

*Spines*. I: fe p3, d4, r2, pa p2, ti p5 + megaspine, v7 + megaspine, me p3, v2. II: fe p4, d4, r3, pa p2, ti p4, v6, me p3, v4. III: fe p3, d5, r5, pa p2, r1, ti p2, d3, r3, v8, me p6, d2, r4, v8. IV: fe p1, d3, r2, pa 0, ti p3, d6 (in small cluster), r3, v9, me p5, d6, r4, v8. Palp: fe p1, d2, pa 0, ti p2, v2.

*Claws*. 5-6 teeth in each of two parallel rows (I), 2-3 in each of two rows (III), all claws of leg IV broken; all of similar size and extend above tufts.

*Trichobothria*. Two rows, each of c. 12 for length of tibiae; c. 11 in short curving row on metatarsi; c. 18 filiform on tarsi, no clavate evident.

*Palp*. Bulb large with broad distal portion, concave groove on contra-tibial surface flanked on one side by one high keel ending quickly, set above that another low keel continues and joins with another low keel to short embolus, other side of large concavity with short keel turning quickly

near embolus; just above embolus another small concavity; embolus short, curved; retrolateral face of cymbium concave; long basal ventral spine on palpal tibia.

*Spinnerets*. PMS absent. Basal, middle, apical, total segments of PLS, 0.94, 0.31, 0.06, 1.31 long, respectively.

#### DISTRIBUTION

Barrow Island, WA.

#### *Synothele durokoppin* sp. nov.

(Figs 120, 129, Table 9)

#### MATERIAL EXAMINED

*Types*. Holotype ♂, Durokoppin Nature Reserve (Site DKR B4), 31°30'S 117°44'E, WA, in pitfall trap, 3-14 Nov 1988, D. Mitchell et al., WAM 89/342; paratypes, 2 ♂♂, same data but Site DKR D1, WAM 89/343, and Site DKR A3, WAM 89/341; ♂, same data but 1-13 Nov 1987, site DKR A2, WAM 91/1421; ♂, same data but 3-14 Nov 1988, WAM 91/1422.

#### DIAGNOSIS

Males are unusual in the combination of subquadrate eye group with very large AME and two rows of teeth on the claws of leg I.

PMS absent, each reduced to small triangular teat. Rastellum absent. Eye group subquadrate. *FEMALES*. Unknown. *MALES*. Two rows of teeth on claws of leg I, no teeth on IV. Tibia I with long conical spur and long apical megaspine; prolateral megaspine short, curved, microspur vestigial, very small. Bulb pyriform with broad embolic origin; embolus shaft broad, finely roughened, with two broad translucent keels twisting to short pointed apex. Intercheliceral tumescence absent but area pallid. Scopulate area of metatarsi and tarsi I, II pallid.

#### ETYMOLOGY

From the native name of the type locality.

#### DESCRIPTION

*HOLOTYPE MALE* WAM 89/342

*Carapace*. 6.06 long, 5.00 wide. Abdomen 6.13 long, 4.06 wide. Total length, 13.

*Colour*. Carapace and chelicerae brown, and legs orange brown not annulated. Abdomen dorsally pallid with brown herringbone pattern, laterally with brown mottling; ventrally pallid, save for few brown flecks near posterior book-lung covers and medially.

*Carapace*. Pilosity: moderately dense bush of long golden hairs on caput and lateral margins, less dense on interstitial ridges; uniform cover of

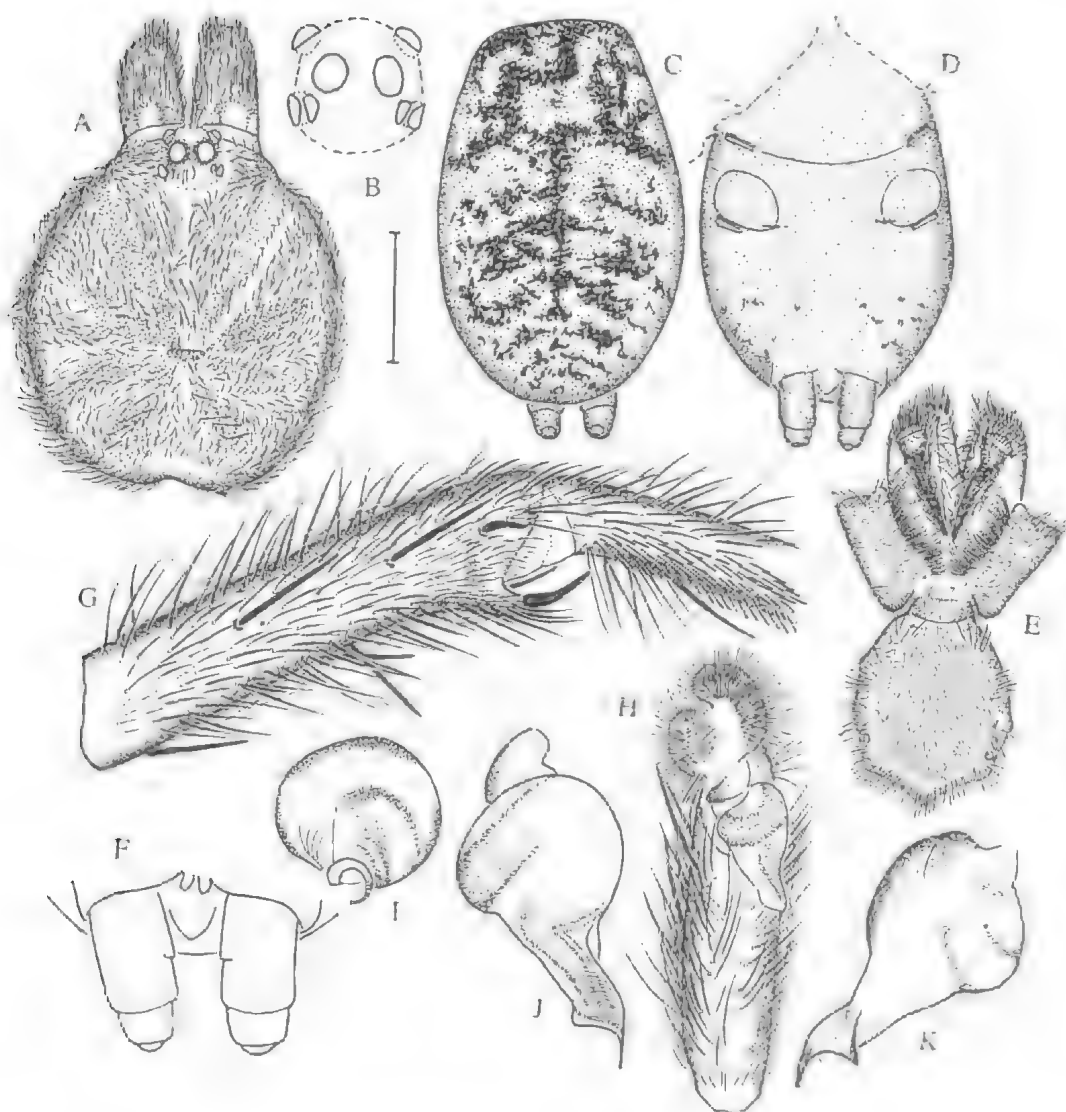


FIG. 129. *Synothele durokoppin* sp. nov., holotype ♂ (WAM89/342). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, D, abdomen, dorsal (C), ventral view (D); E, chelicerae, sternum, maxillae & labium, ventral view; F, spinnerets, ventral view; G, tibia & metatarsus I, prolateral view; H, cymbium & palpal bulb, ventral view; I-K, palpal bulb, posterior (I), retrolateral (J), prolateral view (K). Scale line = 2mm (A, C-E); 1mm (B, F-H); 0.5mm (I-K).

long black bristles; striae distinct, narrow. Bristles: 8-10 erect black beside posterior striae; 6-8 fine anteromedially; 4 long thick and several fine mixed with golden hair between PME, and c.4 long thick and many finer between ALE; dense bush of long hairs obscures band of long black bristles on lateral margins. Fovea short, deep, procurved.

**Eyes.** Tubercle distinct, high. Group occupies 0.38 of head-width; front width, back width, length, 41, 43, 33, respectively. Back row recurved. MOQ front width, back width, length, 34, 34, 24, respectively. AME:ALE:PME:PLE, 13:10:7:10. Eye interspaces: AME-AME, 0.6; AME-ALE, 0.5; ALE-PLE, 1.5; PME-PME, 1.9; PME-PLE, 0.2; ALE-ALE, 1.6.

**Chelicerae.** Bush of long golden hairs and long black bristles prodorsally, laterally only golden hairs. Rastellum absent, save possibly for very low mound. Furrow promargin with 7 spaced teeth, basomesally with c. 10 small teeth and c. 10 granules. Intercheliceral tumescence absent but area pallid.

**Labium.** 0.32 long, 1.00 wide. Labiosternal suture a wide continuous groove.

**Maxillae.** 1.68 long in front, 2.08 long behind, 0.92 wide; with 27-31 distinctly pointed cuspules in inner angle. Heel broad; anterior lobe indistinct.

**Sternum.** 3.08 long, 2.72 wide. Sigilla all small, oval, marginal.

**Legs.** Lateral femora with dark cover of long brown hairs. Tibia I ventrally with conical spur distally, angular megaspine apically, prolaterally with vestigial microspur marked by low setose mound set above slightly curved megaspine. Basifemoral thorns, thorn spines, and preening combs absent. Scopulate surfaces of legs I, II pallid.

	I	II	III	IV	Palp
Femur	5.50	5.31	5.31	7.31	3.13
Patella	2.88	2.75	2.38	2.63	1.75
Tibia	4.13	3.81	3.69	5.50	2.19
Metatarsus	4.06	3.81	4.69	7.00	-
Tarsus	2.50	2.38	2.44	2.94	1.00
Total	19.07	18.06	18.51	25.38	8.07

**Scopula.** Metatarsi: I, sparse, hair long, divided, in distal 1/2; II, like I but thinner; III, two wide triangles in distal 1/4; IV, two narrow triangles in distal 1/6. Tarsi: I-III, hairs long, not obscuring cuticle, full, entire; IV, like III but divided by wide setal band 6-8 wide.

**Spines.** I: fe p2, d4, r1, pa 0, ti p2 + megaspine, v4 + megaspine, me p1, v5. II: fe p3, d4, r2, pa p1w, ti p2, v5, me p1, v1. III: fe p3, d5, r4, pa p2, ti p2, d1, r2, v8, me p4, r4, v7. IV: fe p1, d5, r2, pa 0, ti p2, d1, r4, v11, me p6, r6, v9. Palp: fe p1, d3, pa 0, ti p2, v3.

**Claws.** 2 teeth in parallel rows on prolateral claw of leg I, 3 teeth on ental row of retrolateral claw; claws on leg I project above small tufts; claws of leg IV longer, bare.

**Trichobothria.** Two rows, each of c. 11 for length of tibiae; c. 14 on metatarsi in disordered line dorsally; c. 24 filiform on tarsi

**Palp.** Bulb pyriform with broad embolic origin; embolus shaft broad, finely roughened, with two broad translucent keels twisting to short pointed apex; retrolateral face of cymbium distinctly concave.

**Spinnerets.** PMS each reduced to small triangular teat; PMS 0.05 long, 0.05 wide, 0.32 apart,

and about 0.10 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 1.00, 0.38, 0.08, 1.46 long, respectively.

#### DISTRIBUTION

Durokoppin Nature Reserve, southern WA.

*Synothele goongarrie* sp. nov.  
(Figs 119, 130. Table 9)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Goongarrie, 29°55'S 121°08'E, WA, WAM Goldfields Survey, GGR 5 Mallec/*Triodia*, pitfall trap, 6-11 Oct 1980, WFH et al., WAM 83/157.

#### DIAGNOSIS

Differs from ♀ *S. pectinata* in the reduced size of the claws of I compared with those on IV, weaker rastellum, many long setae on prolateral patellae III, sparser setation and stouter legs.

PMS absent save for by two small clusters of hair on mound. Rastellum spinose low mound. Eye group moderately long, slightly wider behind than in front. FEMALES. Teeth absent on all claws; claws of I about half size of claws on IV. Basifemoral thorns absent. Femora-patellae III prolaterally only with conical setae. Scopula in distal 1/8 of metatarsi III. Preening combs present. Spermathecae four, on each side a broad low mound, separate from and ectal to it a longer slender lobe. MALES. Unknown.

#### ETYMOLOGY

From the native name of the type locality.

#### DESCRIPTION

HOLOTYPE FEMALE WAM 83/157

Carapace 5.48 long, 4.32 wide. Abdomen 8.00 long, 4.40 wide. Total length, 14.

**Colour.** Carapace yellow brown with dark brown margins, light brown areas on caput and lateral of eye group, chelicerae yellow brown, and legs orange brown, not annulated. Abdomen dorsally pallid with broken brown areas forming herringbone effect in posterior half; ventrally pallid save for few scattered brown specks.

**Carapace.** Pilosity: with light cover of fine hairs; striae distinct, narrow, glabrous, dark orange brown. Bristles: 2 erect brown beside posterior striae; 12 anteromedially, 10 directed back; 6 long thick and few finer between PME, and 3 long thick and few finer between ALE; short brown on lateral margins. Fovea clearly procurved.

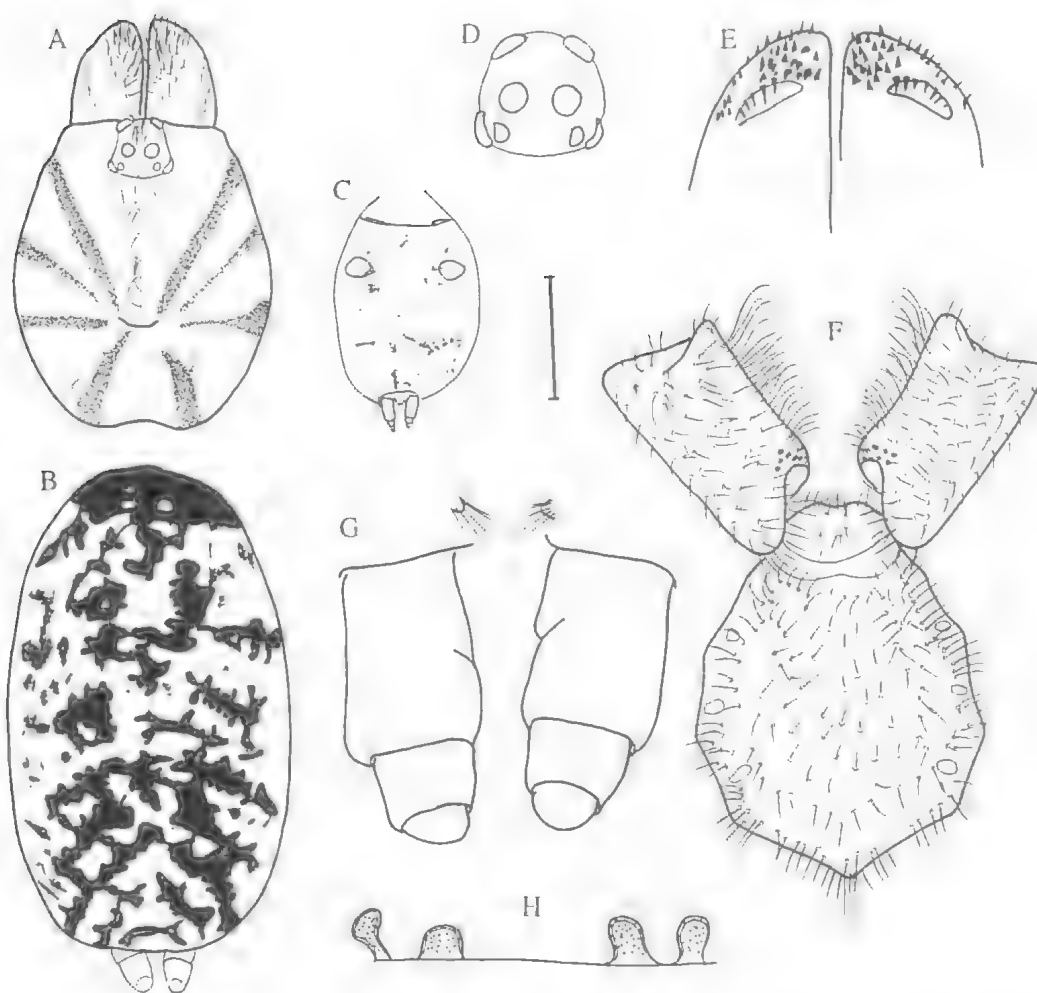


FIG. 130. *Synothele goongarrie* sp. nov., holotype ♀ (WAM 83/157). A, carapace & chelicerae, dorsal view; B, C, abdomen, dorsal (B), ventral view (C); D, eye group, dorsal view; E, rastellum; F, sternum, maxillae & labium, ventral view; G, spinnerets, ventral view; H, spermathecae. Scale line = 2mm (A, B); 1mm (D, F); 0.5mm (E, G); 4mm (C); 0.25mm (H).

**Eyes.** Tubercle distinct. Group occupies 0.32 of head-width; front width, back width, length, 34, 42, 38, respectively. Back row slightly procurved. MOQ front width, back width, length, 28, 29, 20, respectively. AME:ALE:PME:PLE, 13:12:6:12. Eye interspaces: AME-AME, 0.6; AME-ALE, 0.8; ALE-PLE, 1.3; PME-PME, 1.5; PME-PLE, 0.2; ALE-ALE, 1.0.

**Chelicerae.** Few long brown and many short bristles prodorsally, laterally a vague band of short setae. Rastellum of c.6-8 short slender curved spines on inner corner on low mound, laterally long thick curved overhang fang edge.

Furrow promargin with 7 small spaced teeth, basomesally with 5 small teeth and few granules.

**Labium.** 0.48 long, 0.85 wide. Labiosternal suture two separated sigilla in groove.

**Maxillae.** 1.38 long in front, 2.00 long behind, 0.88 wide; with 9-12 blunt cuspules in inner angle. Heel slightly produced; anterior lobe indistinct.

**Sternum.** 2.75 long, 2.35 wide. Sigilla oval and marginal, posterior pair submarginal.

**Legs.** Basifemoral thorns absent. Thorn spines absent but distal femora III, IV with many short strong bristles and adjacent patellar surface very

setose. Preening combs: 1 of 2-3 setae on retroventral III, IV.

	I	II	III	IV	Palp
Femur	2.72	2.80	2.60	3.88	2.28
Patella	2.16	2.08	1.72	2.28	1.52
Tibia	1.88	1.80	1.52	2.88	1.12
Metatarsus	1.40	1.40	1.88	3.28	-
Tarsus	0.88	1.08	1.12	1.40	1.12
Total	9.04	9.16	8.84	13.72	6.04

*Scopula*. Metatarsi: I, II, in distal half (I) to third (II), thin, divided; III, IV, few scattered hairs in distal 1/8. Tarsi: I, thin, hairs short, entire (I) or divided by line of setae (II), full; III, IV, thin, divided by setal band 6-8 (III) or 8-10 (IV) wide.

*Spines*. I: fe p1, d5, pa 0, ti 0, me v1w. II: fe p1, pa 0, ti 0, me v1w. III: fe d1, r1, pa p2, r1, ti p2, r2, v7, me p3, r2, v9. IV: fe d2w, r1, pa 0, ti r3, v9, me p3, r2, v8. Palp: fe p1, d2, pa 0, ti v5.

*Claws*. All bare; leg I claws and palpal claw c. half height of tufts.

*Trichobothria*. Two rows, each of c. 8 for length of tibiae; c. 10-12 on metatarsi in curving row; c. 4 small clavate and c. 10 filiform on tarsi.

*Spermathecae*. Four, on each side a broad low mound, separate from and ectal to it a longer slender lobe.

*Spinnerets*. PMS represented only by two small clusters of hair. Basal, middle, apical, total segments of PLS, 0.78, 0.35, 0.08, 1.21 long, respectively.

#### DISTRIBUTION & HABITAT

Goongarrie, WA, in Mallee *Triodia* bushland.

#### *Synothele harveyi* Churchill & Raven, sp. nov. (Figs 120, 131, Table 9)

#### MATERIAL EXAMINED

TYPE. Holotype ♂, Mt Cooke, 32°25'S, 116°18'E, 15 May-16 Jun 1991, MH, JW, pitfall trap, Site 1, WAM 91/1428.

#### DIAGNOSIS

Males differ from those of *S. houstoni* in having teeth on leg I claws and from *S. arrakis* in having a microspur.

PMS absent. Rastellum absent. Eye group long, quadrangular. FEMALES. All paired claws dentate; claws of I about half size of IV. Basifemoral thorns and preening combs present. Femoropatellae III prolaterally only with conical setae. Scopula in distal 1/5 of metatarsi III. Spermathecae two, each a broad low plateau-like mound with longer broad lobe ectally. MALES.

One row of teeth on claws of legs I, IV. Tibia I with distal ventral conical spur and upcurved megaspine; prolaterally a thumb-like microspur set against slender downcurved megaspine. Palpal bulb broad, pyriform with broad embolus with high translucent spiralled keel and lower keel; embolus acute in distal 1/4. Intercheliceral tumescence absent.

#### ETYMOLOGY

For Dr Mark S. Harvey, Curator of Arachnids, Western Australian Museum.

#### DESCRIPTION

HOLOTYPE MALE WAM 91/1428

Carapace 6.71 long, 6.12 wide. Abdomen 7.29 long, 5.29 wide. Total length, 22.

*Colour*. Carapace yellow brown. Chelicerae brown, and legs yellow brown, not annulated. Abdomen dorsally with irregular purple brown mottled areas on pallid background; ventrally pale yellow with a few small dark spots between posterior booklung covers and as a vague line between these and spinnerets.

*Carapace*. Pilosity: uniform thin cover of fine brown bristles and fine silvery hairs, density of these reduced lateral to eye group and immediately behind fovea; only anterior and posterior pairs of striae distinct with the latter more narrow. Bristles: 5-6 erect black beside posterior striae; 8-10 anteromedially and many in band beside caput; 8-10 long thick and few finer between PME, and 5 long thick and few finer between ALE; bush of long hairs and long bristles on lateral margins. Fovea straight.

*Eyes*. Tubercle distinct. Group occupies 0.34 of head-width; front width, back width, length, 39, 47, 34, respectively. Back row slightly recurved. MOQ front width, back width, length, 35, 31, 22, respectively. AME:ALE:PME:PLE, 15:13:7:13. Eye interspaces: AME-AME, 0.3; AME-ALE, 0.3; ALE-PLE, 0.9; PME-PME, 1.5; PME-PLE, 0.1; ALE-ALE, 1.1.

*Chelicerae*. Moderately long brown bristles and silvery fine hairs in a wide band prodorsally, laterally with shorter and less bristles. Rastellum and mound absent. Intercheliceral tumescence absent. Furrow promargin with 8-10 teeth, basomesal area obscured by heavy bush of red hair.

*Labium*. 0.43 long, 1.08 wide. A line of 12 bristles on transverse ridge of labium. Labiosternal suture narrow.



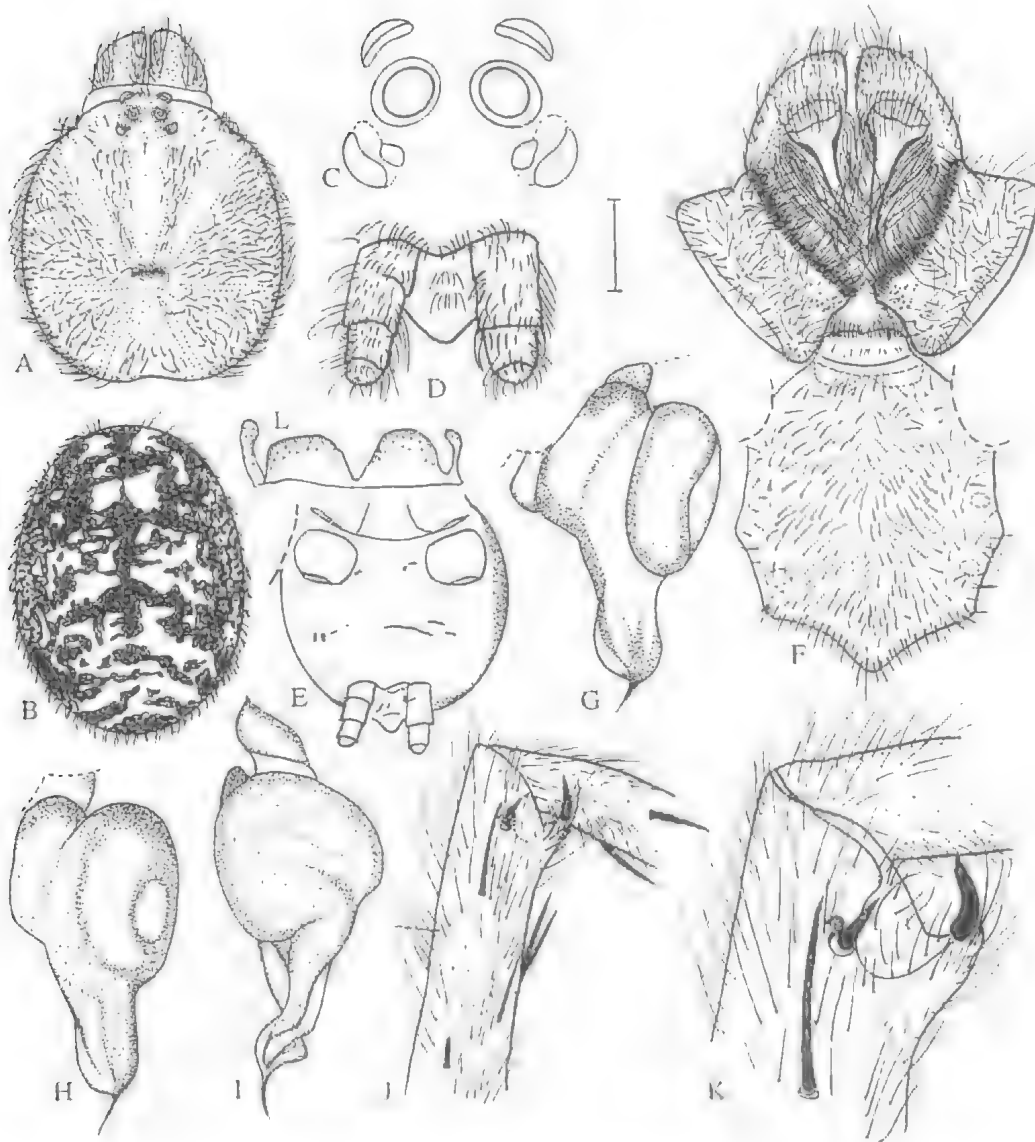


FIG. 131. *Synothele harveyi* Churchill & Raven, sp. nov., holotype ♂ (WAM 91/1428). A, carapace & chelicerae, dorsal view; B, E, abdomen, dorsal (B), ventral view (E); C, eyes, dorsal view; D, spinnerets, ventral view; F, sternum, maxillae, labium & chelicerae, ventral view; G-I, palpal bulb, retrolateral (H), ventral (I) & prolateral (G) views; J, K, tibia & metatarsus I, ventral right, prolateral view; L, spermathecae. Scale line = 2mm (A, B, E); 1mm (D, F, J); 0.36mm (G-I); 0.5mm (C, K, L).

**Maxillae.** 1.78 long in front, 2.22 long behind, 0.86 wide; with c. 19 cuspules in inner angle. Heel unmodified; anterior lobe distinct.

**Sternum.** 3.41 long, 2.92 wide. Sigilla oval and marginal with their size increasing posteriorly.

**Legs.** Tibia I with distal ventral conical spur and upcurved megaspine; prolaterally a thumb-like

microspur set against slender downcurved megaspine. Basifemoral thorns and thorn spines absent. Preening combs: weak as 2 setae on retroventral IV. Light pile of fine curved white hairs on dorsal metatarsi.

**Scopula.** Scopulate areas of pallid, cuticle soft, caved in. Metatarsi: I, II, moderately dense in

distal 1/4, hairs short, few hairs in sparse normally pigmented area in distal 1/2; III, thin, in distal 1/5; IV, sparse in distal 1/6. Tarsi: I, II, full, dense, entire, hairs short; III, entire, thin, divided by setal band 1 wide; IV, thin divided by setal band 4-5 wide.

	I	II	III	IV	Palp
Femur	6.63	6.38	6.06	8.13	3.50
Patella	3.25	3.13	2.63	3.13	1.88
Tibia	4.69	4.31	4.31	6.44	2.56
Metatarsus	4.69	4.38	5.44	8.63	-
Tarsus	2.81	2.69	2.88	3.75	1.25
Total	22.07	20.89	21.32	30.08	9.19

**Spines.** I: fe p4, d4, r2, pa 0, ti p2 + megaspine, v6 + megaspine, me p1, v1 basal. II: fe p3, d4, r3, pa p1, ti p3, v6, me p2, r1, v1. III: fe p3, d4, r3, pa p2, ti p2, d1, r3, v6, me p6, r2, v7. IV: fe p4, d7, r2, pa 0, ti p2, r4, v7, me p3, r3, v8. Palp: fe p1, d3, pa 0, ti p3, v3.

**Claws.** On leg I slightly smaller than tufts. 2-4 teeth on inner face of leg I; leg IV bare.

**Trichobothria.** Two rows, each of c.10 for length of tibiae; c. 10 on metatarsi in short curving row; c.16 filiform on tarsi, none clavate.

**Palp.** Bulb broad pyriform with broad embolus with high translucent spiralled keel and lower keel beside it, another ridge opposite main keel; embolus acute in distal 1/4; retrolateral face of cymbium concave.

**Spinnerets.** PMS absent. Basal, middle, apical, total segments of PLS, 0.92, 0.43, 0.27, 1.62 long, respectively.

#### DISTRIBUTION & HABITAT

Mt Cooke, SE of Perth, SW WA, an area of Marri (*Eucalyptus calophylla*)/ Jarrah (*E. marginata*) woodland on lateritic soil.

#### REMARKS

Spines on retrolateral femora I, II are rare. Since only one specimen is known, the variation of spines limits a broader use of the character. A female was collected from the type locality but died in captivity. The diagnosis was taken from the dried specimen which was not otherwise described.

*Synothele houstoni* sp. nov.  
(Figs 120, 132, Table 9)

#### MATERIAL EXAMINED

TYPE. Holotype ♂, 3.7 km SSW McDermid Rock, 32°01'S 120°44'E, WA, 27 Sep-3 Oct 1978, TH et al., WAM 83/210.

#### DIAGNOSIS

Males differ from those *S. rubripes* lacking posterior median spinnerets, more extensive keels on the palpal bulb and lacking teeth on the claws.

PMS absent. Rastellum and mound absent. Eyc group long, slightly wider behind than in front. FEMALE. Unknown. MALES. No teeth on claws of legs I, IV. Tibia I with small conical spur and long apical megaspine; microspur spur, prolateral megaspine short, straight. Bulb short pyriform with 6 keels, 2 large and 4 small, short and lower, twisted apically to short hooked embolus. Intercheliceral tumescence a small, distinct, pallid setose area. Scopulate surfaces pallid; tarsi I, II, and distal metatarsi I, II, incrassate.

#### ETYMOLOGY

For Dr T.F. Houston, Curator of Insects, Western Australian Museum.

#### DESCRIPTION

HOLOTYPE MALE WAM 83/210

Carapace 3.96 long, 3.36 wide. Abdomen 3.76 long, 2.32 wide. Total length, 8.

**Colour.** Carapace and chelicerae orange brown, legs yellow brown, not annulated. Abdomen dorsally blue black with 30-40 large irregularly shaped white areas, posteriorly forming vague herringbone pattern; ventrally pallid with thin brown areas beside posterior booklung covers, in front of spinnerets and in transverse zone medially.

**Carapace.** Pilosity: uniform cover of moderately long black bristles and light cover of fine silver hairs; anterior and posterior striae indistinct, narrow. Bristles: c.5 erect black beside posterior striae, 11 thick anteromedially, 7 directed back, 20-30 in bands beside caput; 8 long thick and 4-6 finer between PME, and 8 long thick and few finer between ALE; few fine long silver hairs and long curved brown bristles on lateral margins. Fovea short, procurved.

**Eyes.** Tubercle long, distinct. Group occupies 0.33 of head-width; front width, back width, length, 20, 29, 30, respectively. Back row clearly recurved. MOQ front width, back width, length, 22, 22, 18, respectively. AME:ALE:PME:PLE, 11:8:6:8. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.7; ALE-PLE, 1.5; PME-PME, 1.2; PME-PLE, 0.1; ALE-ALE, 0.5.

**Chelicerae.** Long curved brown bristles in broad band prodorsally, laterally narrow band short setae. Rastellum and mound absent. Intercheliceral tumescence a small, distinct, pallid

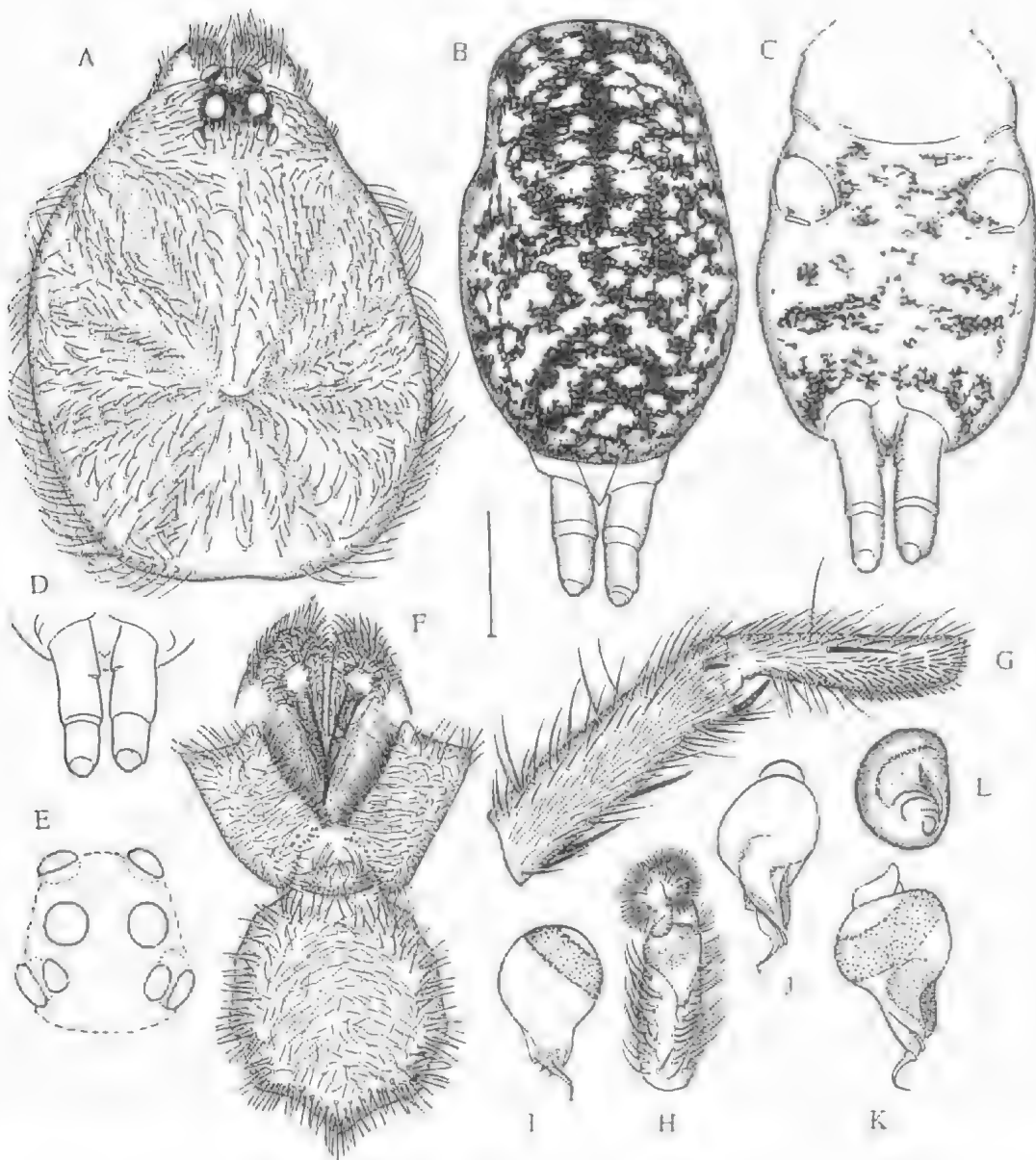


FIG. 132. *Synothele houstoni* sp. nov., holotype ♂ (WAM 83/210). A, carapace & chelicerae, dorsal view; B, C, abdomen, dorsal (B), ventral view (C); D, spinnerets, ventral view; E, eye group, dorsal view; F, chelicerae, sternum, maxillae & labium, ventral view; G, tibia & metatarsus I, prolateral view; H, cymbium & palpal bulb, ventral view; I-L, palpal bulb, ventral (I), prolateral (J), retrolateral (K), posterior views (L). Scale line = 1mm (A-D, F-H); 2mm (I-L); 0.5mm (E).

setose area. Furrow promargin with 7 small spaced teeth, basomesally with 8-10 small granules.

**Labium.** 0.23 long, 0.73 wide. Labiosternal suture a narrow groove.

**Maxillae.** 1.03 long in front, 1.30 long behind, 0.60 wide; with 10-13 cuspules in inner angle.

Heel slightly produced; anterior lobe small, distinct.

**Sternum.** 1.93 long, 1.78 wide. Sigilla all small, oval, marginal.

**Legs.** Tibia I with small conical spur with up-curved spur; microspur small, like nodule; almost

straight megaspine set against it. Thorn spines, and preening combs absent. Scopulate surfaces pallid; tarsi I, II, and distal metatarsi I, II, incrassate.

	I	II	III	IV	Palp
Femur	3.12	3.00	2.76	3.88	1.88
Patella	2.00	1.80	1.52	1.76	1.16
Tibia	2.48	2.20	2.00	3.28	1.20
Metatarsus	1.92	1.92	2.48	3.84	—
Tarsus	1.28	1.40	1.48	1.76	0.72
Total	10.80	10.32	10.24	14.52	4.96

*Scopula*. Metatarsi: I, II, in distal third, thin, entire; III, few scattered hairs in distal fifth; IV, few scattered hairs distally. Tarsi: I, II, full, moderately dense, entire; III, mixed with scattered setae; IV, divided by setal band 6-8 wide.

*Spines*. I: fe p1, d4, pa 0, ti p2 + megaspine, v3 + megaspine, me p1, II: fe p2, d4, pa 0, ti p2, v3, me p1. III: fe p3, d4, r3, pa p3, r1, v1, ti p2, d1, r2, v9, me p4, r4, v6. IV: fe p2, d4, r2, pa r1, v1, ti p2, r3, v9, me p2, r5, v7. Palp: fe p1, d4, pa 0, ti p1.

*Claws*. On I, c. half height of tufts, on IV about equal to tufts; all claws bare.

*Trichobothria*. Two rows, each of c. 8 for length of tibiae; c. 10 on metatarsi in slightly curving row; c. 12 filiform on tarsi.

*Palp*. Bulb short pyriform with gradual origin to distal portion; 6 keels, 2 large and 4 small, short and lower, twisted apically to short hooked embolus; retrolateral face of cymbium concave.

*Spinnerets*. PMS represented by two small hirsute lobes, each 0.04 long, 0.03 wide, 0.10 apart, and c. 0.08 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 0.65, 0.30, 0.13, 1.08 long, respectively.

#### DISTRIBUTION & HABITAT

Near McDermid Rock, WA.

*Synothele howi* sp. nov.  
(Figs 119, 133, Table 9)

#### MATERIAL EXAMINED

TYPE. Holotype ♂, Bungabin Hill, 30°18'S 119°43'E, WA, site BHR 2, *E. salmonophloia* woodland, WAM Goldfields Survey, 13-18 Sep 1979, R.A. How, WAM 83/93.

#### DIAGNOSIS

Males differ from those of *S. karara* and *S. koonalda* in that the keel on the palpal bulb is smaller and less distinct at its origin and the rastellum is much stronger.

PMS absent. Rastellum a cluster of 4-6 short straight spines on low mound on inner corner.

Eye group long, slightly wider behind than in front. FEMALES. Unknown. MALES. Two rows of teeth on claws of legs I, IV; claws of similar size. Tibia I with low conical spur with long slender up-curved megaspine; microspur absent, prolateral megaspine elongate down-curved. Bulb pyriform, tapering gradually to embolus, taper with many fine grooves and two low distal keels join at short slightly hooked embolus. Tarsi I, II, proximally incrassate; metatarsi I, II, incrassate for distal half.

#### ETYMOLOGY

For Dr Ric How, Curator, Survey Department, Western Australian Museum.

#### DESCRIPTION

HOLOTYPE MALE WAM 83/93

Carapace 4.08 long, 3.48 wide. Abdomen 4.40 long, 2.52 wide. Total length, 9.

*Colour*. Carapace dark orange brown on caput and in broad medial band on caput with yellow brown margins, chelicerae dark orange brown, and legs yellow brown, not annulated. Abdomen dorsally blue black with fine irregular mottling most evident posteriorly; ventrally pallid with two small crescentic brown areas on inner edge of posterior hooklungs and irregular brown vee medially behind that.

*Carapace*. Pilosity: uniform light cover of fine black bristles and fine golden brown hairs; most striae indistinct, narrow, anterior pair broad glabrous. Bristles: c. 3-6 erect black beside posterior striae; 10 posteriorly directed anteromedially and thick in band beside caput; 6 long thick and few finer between PME, and 3 long thick and 3-5 finer between ALE; long brown hairs and long thick curved bristles criss-cross on lateral margins, Fovea short, straight.

*Eyes*. Tubercle distinct. Group occupies 0.36 of head-width; front width, back width, length, 22, 30, 31, respectively. Back row straight. PME small, set inside outer line of AME. MOQ front width, back width, length, 23, 20, 19, respectively. AME:ALE:PME:PLE, 11:8:4:8. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.6; ALE-PLE, 1.6; PME-PME, 1.1; PME-PLE, 0.1; ALE-ALE, 0.7.

*Chelicerae*. Many long brown hairs and bristles in broad band prodorsally, laterally short bristles and long hairs. Rastellum a cluster of 4-6 short straight spines on low mound on inner corner laterally a line of 6-8 curved spines overhang fang. Intercheliceral tumescence absent. Furrow promargin with 7 spaced teeth, basomesally bare.

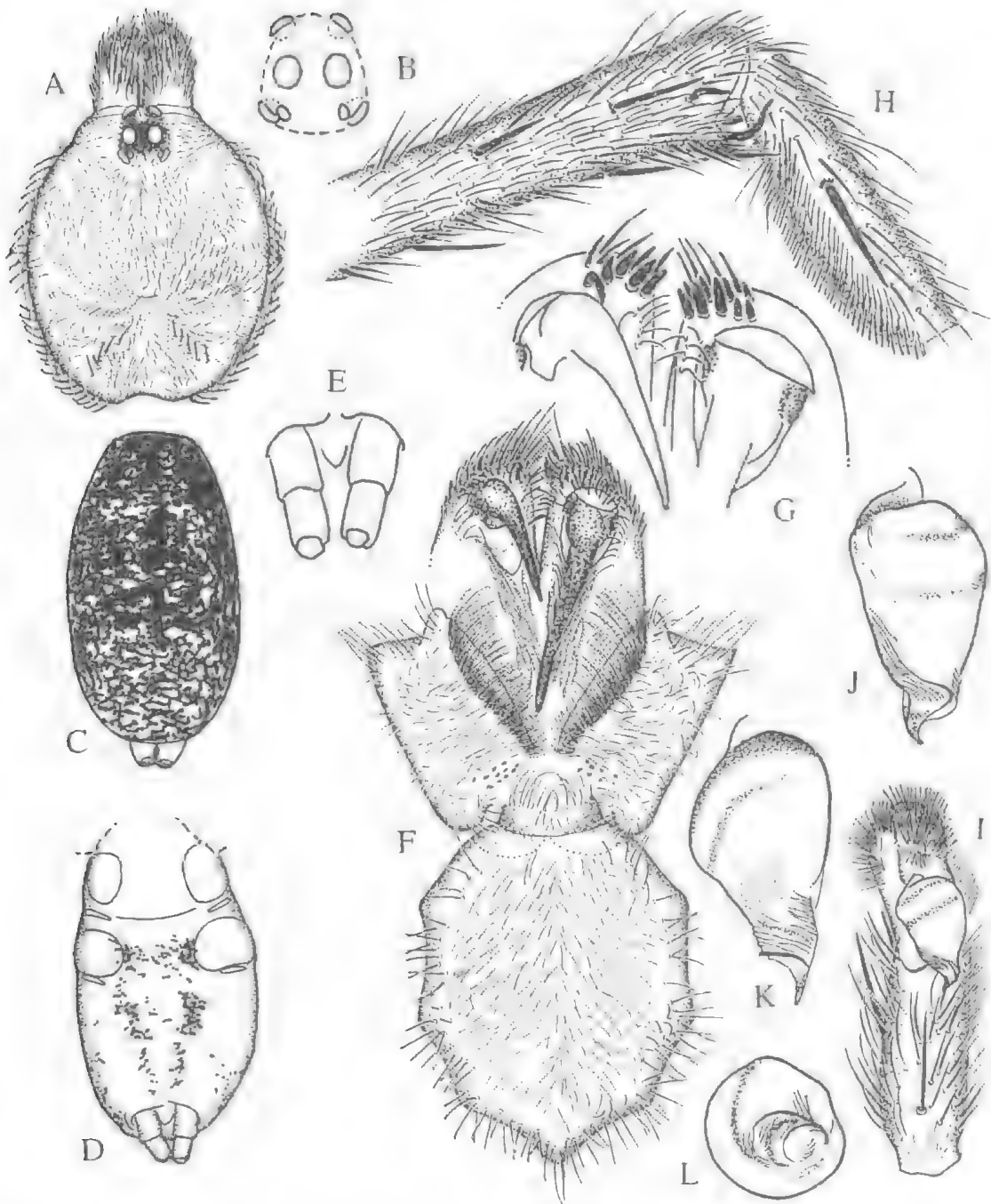


FIG. 133. *Synothele howi* sp. nov., holotype ♂ (WAM 83/93). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, D, abdomen, dorsal view (C), ventral view (D); E, spinnerets, ventral view; F, chelicerae, sternum, maxillae & labium, ventral view; G, rastellum, ventral view; H, tibia & metatarsus I, prolateral view; I, cymbium & palpal bulb, ventral view; J-L, palpal bulb, dorsal (J), ventral (K) & posterior view (L). Scale line = 2mm (A, C, D); 1mm (B, E, F, H, I); 0.5mm (G, J-L).

**Labium.** 0.25 long, 0.70 wide. Labiosternal suture a broad shallow groove of 2 separated sigilla.

**Maxillae.** 1.08 long in front, 1.30 long behind, 0.63 wide; with 8-11 blunt cuspules in inner angle. Heel small; anterior lobe distinct, pointed.

**Sternum.** 2.13 long, 1.85 wide. Sigilla all small, indistinct, oval, marginal.

**Legs.** Tibia I with low conical spur with long slender up-curved megaspine; microspur absent, prolateral megaspine elongate down curved. Weak thorn spines prolaterally on distal femora and adjacent proximal patellae III, IV. Preening combs absent but 3 weak close setae on retroventral IV indicate probably distinct in ♀♀. Tarsi I, II, proximally incrassate; metatarsi I, II, incrassate for distal half.

	I	II	III	IV	Palp
Femur	3.80	3.48	3.24	4.32	2.08
Patella	2.16	1.96	1.64	1.84	1.28
Tibia	3.00	2.72	2.48	3.92	1.44
Metatarsus	2.28	2.28	2.60	4.08	-
Tarsus	1.36	1.28	1.36	1.64	0.84
Total	12.60	11.72	11.32	15.80	5.64

**Scopula.** All scopulate surfaces pallid. Metatarsi: I, II, distal 2/3 (I) to half (II), thin, entire; III, thin band, in distal third, divided by setal band; IV, two lines of hair in distal 1/5, widely divided by setal band. Tarsi: I, II, hairs short, full, thin, entire; III, thin, hairs long, mixed with by 8-10 setae; IV, divided by setal band 4-6 wide.

**Spines.** I: fe p2, d4, r1, pa 0, ti p2 + megaspine, v5 + megaspine, me p1, v1. II: fe p2, d4, pa 0, ti p2, v7, me p1, v1. III: fe p3, d3, r3, pa 0, ti p2, d3, r2, v9, me p2, d5, r2, v4, IV: fe p1, d3, r2, pa 0, ti p2, d3, r3, v7, me p3, d5, r2, v5. Palp: fe p1, d3, pa 0, ti p1, v1.

**Claws.** c.3-4 (IV)-6 (I) teeth in each of two slightly flared rows on claws; all claws similar in size, and as high as tufts.

**Trichobothria.** Two rows, each of c.8 for half of tibiae; c.7 in cluster in distal 1/3 of metatarsi; c.11 filiform on tarsi, none clavate.

**Palp.** Bulb pyriform, tapering gradually to embolus, taper with many fine grooves and two low distal keels join at short slightly hooked embolus; retrolateral face of cymbium deeply concave.

**Spinnerets.** PMS absent. Basal, middle, apical, total segments of PLS, 0.43, 0.25, 0.05, 0.73 long, respectively.

#### DISTRIBUTION & HABITAT

Bungalbin Hill in *Eucalyptus salmonophloia* woodland, WA.

#### *Synothele karara* sp. nov. (Figs 119, 134, Table 9)

#### MATERIAL EXAMINED

TYPE. Holotype ♂, near Karara Well, 24, 23°06'S 123°22'E, WA, 21 Jun 1986, L. Charlton, WAM 89/374.

#### DIAGNOSIS

Males differ from those of *S. howi* in that the keel on the palpal bulb is larger and quite distinct at its origin and the rastellum is weaker, and from *S. koonalda* in the second large keel on the bulb.

PMS absent. Rastellum a low spinose mound. Eye group long, slightly wider behind than in front. FEMALES. Unknown. MALES. Two rows of teeth on claws of legs I, IV, Tibia I with conical spur and long apical megaspine; prolateral megaspine long, microspur absent. Intercheliceral tumescence absent. Scopulate area of metatarsi I, II and basal tarsi I, II incrassate, pallid.

#### ETYMOLOGY

From the native name of the type locality.

#### DESCRIPTION

HOLOTYPE MALE WAM 89/374

Carapace 4.81 long, 4.19 wide. Abdomen 5.94 long, 3.75 wide. Total length, 11.

**Colour.** Carapace orange brown with dark brown margins, chelicerae dark orange brown, and legs orange brown, not annulated. Abdomen dorsally brown with fine white spots; ventrally pallid save for two dark brown crescentic areas beside posterior booklung covers, and two more centrally.

**Curapace.** Caput and thoracic region elevated so thoracic region curved up to fovea. Pilosity: light cover of fine brown hairs and black bristles; striae indistinct, only anterior pair grooved. Bristles: 20-30 thicker across posterior surface; slightly disordered line of 10-15 anteromedially and more similar in band beside caput; several between PME, and 2 long, curved, thick and several finer between ALE; bush of long silver hairs and line of short curved black bristles on lateral margins. Fovea of medium width, deep, straight.

**Eyes.** Tubercle distinct, very high. Group occupies 0.28 of head-width; front width, back width, length, 26, 37, 35, respectively. Back row recurved. AME very large; PLE smaller than ALE. MOQ front width, back width, length, 30, 26, 21, respectively. AME:ALE:PME:PLE, 14:8:4:7. Eye interspaces: AME-AME, 0.6;



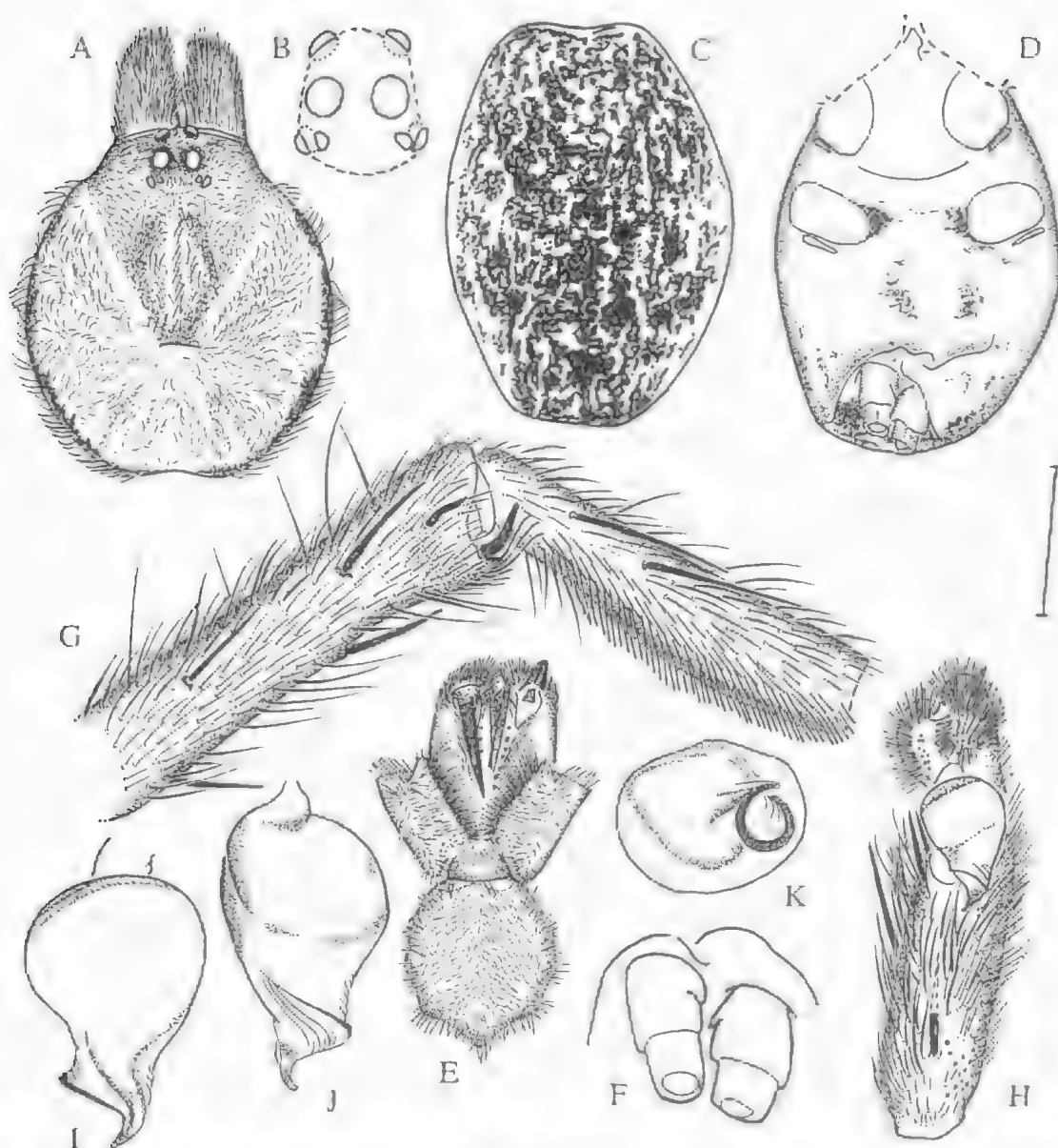


FIG. 134. *Synothele karara* sp. nov., holotype ♂ (WAM 89/374). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, D, abdomen, dorsal (C), ventral view (D); E, chelicerae, sternum, maxillae & labium, ventral view; F, spinnerets, ventral view; G, tibia & metatarsus I, prolateral view; H, cymbium & palpal bulb, ventral view; I-K, palpal bulb, ventral (I), retrolateral (J) & posterior view (K). Scale line = 2mm (A, C-E); 1mm (B, F-H); 0.5mm (I-K).

AME-ALÉ, 0.6; ALÉ-PLÉ, 1.6; PME-PME, 1.3; PME-PLÉ, 0.1; ALÉ-ALÉ, 0.8.

**Chelicerae.** Wide band of many short brown bristles mixed with few silver hairs prodorsally, laterally a narrow glabrous band then another setose band. Rastellum a low but distinct mound on inner corner bearing three short tapering

spines, laterally more longer weaker spines. Furrow promargin with 7 spaced teeth, basomesally with 4 small teeth and 10-12 granules. Intercheliceral tumescence absent.

**Labium.** 0.32 long, 0.88 wide. Labiosternal suture two pigmented but hardly grooved areas



*Maxillae*. 1.44 long in front, 1.72 long behind, 0.80 wide; with 17-20 blunt cuspules in inner angle. Heel broad; anterior lobe distinct, pointed.

*Sternum*. 2.48 long, 2.20 wide; domed uniformly. Sigilla all small to very small, oval, marginal, save for narrow posterior pair.

*Legs*. Light pile of brown hair laterally on femora. Tibia I proventrally with short, apically wide conical spur bearing strong megaspine off, not above, tip; prolaterally a thick slightly curved megaspine, microspur absent. Thorn spines absent but femora III and IV prolaterally with cluster of 3-5 strong setae forming comb on distal edge. Preening combs absent. Scopulate areas of legs I, II, pallid, and of metatarsi I, II, dorsoventrally bowed and apically incrassate.

	I	II	III	IV	Palp
Femur	4.38	4.13	4.06	5.06	2.50
Patella	2.44	2.25	2.00	2.25	1.38
Tibia	3.88	3.13	3.00	4.88	1.81
Metatarsus	3.00	2.88	3.63	5.00	-
Tarsus	1.63	1.56	1.69	2.00	1.06
Total	15.33	13.95	14.38	19.19	6.75

*Scopula*. Metatarsi: I, II, hairs short, sparse, distal 3/4 (I) to 1/2 (II), entire; III, IV, two wide triangles in distal quarter (III) to fifth (IV). Tarsi: I, II, hairs short, sparse, full, entire; III, hairs long, sparse, divided by setal band 6-8 wide; IV, divided by setal band wider than scopulate bands.

*Spines*. I: fe p2, d4, r2, pa 0, ti p2 + megaspine, v4 + megaspine, me p2 elongate, r1, v2. II: fe p3, d4, pa 0, ti p2, v6, me p2 elongate, r1, v2. III: fe p1, d4, r3, pa 0, ti d5, r2, v9, me p3, d8, r2, v7. IV: fe d4, r2, pa 0, ti p2, d8, r3, v10, me p3, d8, r3, v8. Palp: fe p1, d2, pa 0, ti p2, v4.

*Claws*. Two short, flared rows of 4 (inner)-6 teeth on short claws emerging above noticeably small claw tufts on I; 2 (inner)-6 teeth in each of two slightly flared rows arise above claw tufts on IV. Claw tufts on I, II, smaller than on III, IV.

*Trichobothria*. Two rows, each of c.10 for length of tibiae; c.17 on metatarsi in near dorsal line becoming disordered distally; c.11 filiform on tarsi. Tarsal organ set back from distal edge.

*Palp*. Bulb pyriform with broad embolic shaft bearing one long transversely spiralled keel originating near basal part of bulb and joining with two shorter keels near tip; area below keel with 4-6 long low ridges; retrolateral face of cymbium concave.

*Spinnerets*. PMS absent. Basal, middle, apical, total segments of PLS, 0.58, 0.33, 0.13, 1.04 long, respectively.

#### DISTRIBUTION

Karara Well, NW WA

#### REMARKS

This species is unusual in having spines on retrolateral metatarsi I, II, and several (5-8) spines dorsally on tibiae and metatarsi III, IV.

#### *Synothele koonalda* sp. nov. (Figs 119, 135, Table 9)

#### MATERIAL EXAMINED

TYPE. Holotype ♂, 48km SE Koonalda Station, SA, 31°30'40"S 130°21'30"E, 18 Sep 1984, Nullarbor Survey, SAMA N1992243.

#### DIAGNOSIS

Males differ from those of *S. karara* in the second large keel on the palpal bulb and from *S. ooldea* by brown V on venter and large PLE compared with PME.

PMS absent. Abdomen dorsally pallid with irregular brown areas anteriorly. Rastellum a very low mound with c.8 short conical slender spines apically. Preening combs present. FEMALES. Unknown. MALES. Claws with two rows of teeth. Intercheliceral tumescence small, pallid. Tibia I with distal spur with moderately long conical megaspine; microspur absent, upper megaspine long curved. Palpal bulb pyriform, with one large ridge with two distinct keels; embolus short; retrolateral face of cymbium slightly concave.

#### ETYMOLOGY

From the native name of the type locality.

#### DESCRIPTION

HOLOTYPE MALE SAMA N1992243

Carapace 4.33 long, 3.33 wide. Abdomen 4.07 long, 2.47 wide. Total length, 9.

*Colour*. Carapace light orange brown, caput darker with pallid lines medially, chelicerae dark brown, legs yellow brown, not annulated. Abdomen dorsally pallid with irregular brown areas anteriorly and no pattern evident behind that; ventrally pallid with distinct brown Vee and brown flecks laterally.

*Carapace*. Pilosity: moderate cover of long golden brown hairs on caput much sparser elsewhere; striae indistinct. Bristles: c.5-7 erect thick black beside posterior striae; c.20 anteromedially and many in band beside caput; c.4 long thick and several finer between PME, and c.5 long thick and several finer between ALE; light pile of long pallid hairs and long black bristles on lateral margins. Fovea short, straight.

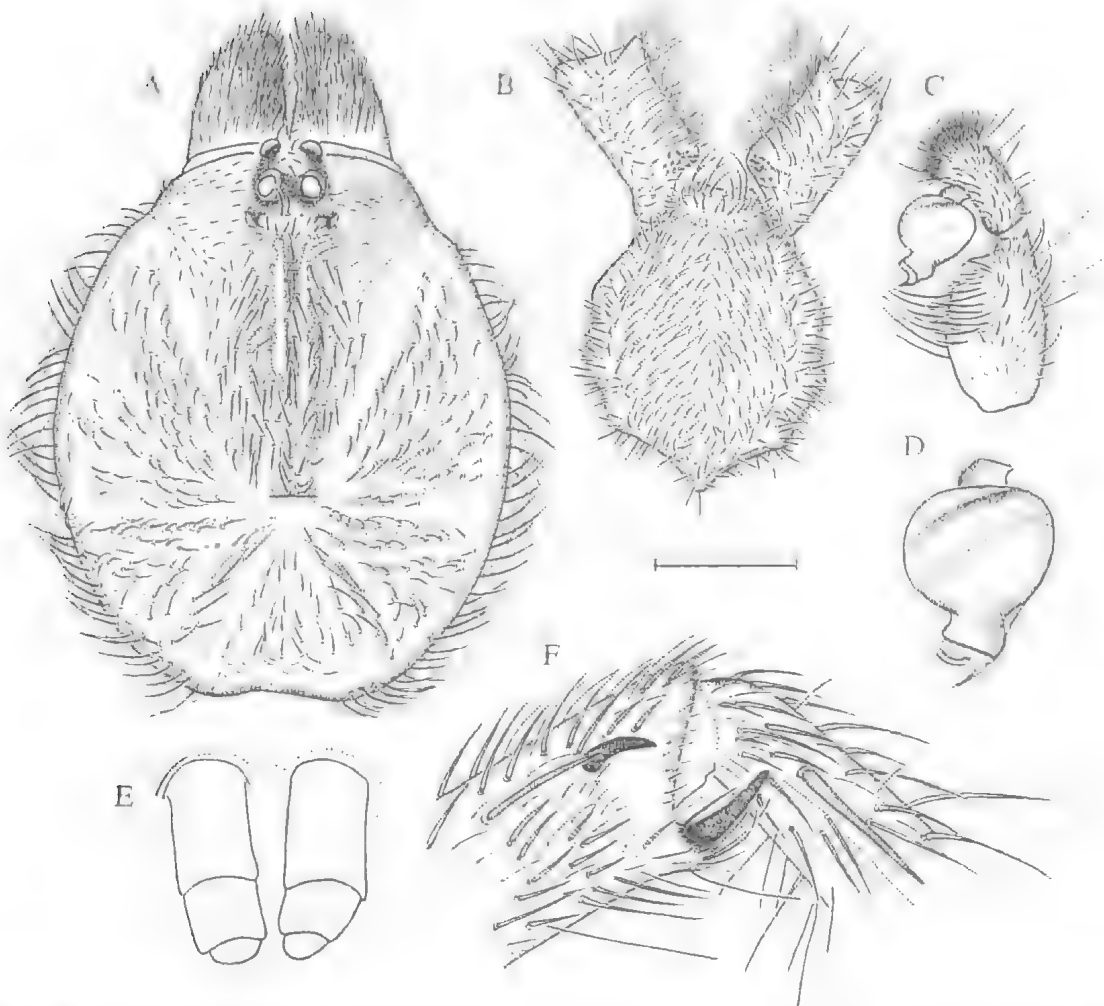


FIG. 135. *Synothele koonaldi* sp. nov., holotype ♂ (SAMA1992243). A, carapace & chelicerae, dorsal view; B, sternum, maxillae & labium, ventral view; C, D, palpal tibia, cymbium & bulb (D), retrolateral view; E, spinnerets, ventral view; F, tibia & metatarsus I, prolateral view. Scale line = 1mm (A-C); 0.5mm (D-F).

**Eyes.** Tubercle distinct. Group occupies 0.29 of head-width; front width, back width, length, 29, 41, 43, respectively. Back row procurved. MOQ front width, back width, length, 29, 30, 27, respectively. AME:ALE:PME:PLE, 12:15:5:9. Eye interspaces: AME-AME, 0.7; AME-ALE, 0.8; ALE-PLE, 2.; PME-PME, 1.6; PME-PLE, 0.2; ALE-ALE, 0.8.

**Chelicerae.** Long silver hairs enclose short black bristles over entire surface. Rastellum a very low mound with c.8 short conical slender spines apically, elsewhere spines longer, thinner. Intercheliceral tumescence a small pallid area. Furrow promargin with 7 teeth, basomesally with no teeth evident.

**Labium.** 0.32 long, 0.65 wide; short; 10 thick setae in line behind glabrous area anteriorly. Labiosternal suture a continuous narrow groove.

**Maxillae.** 0.87 long in front, 1.19 long behind, 0.55 wide; with 14-15 blunt cuspules in inner angle. Heel slightly produced; anterior lobe distinct, conical.

**Sternum.** 1.74 long, 1.77 wide. Sigilla all small, indistinct, oval, marginal.

**Legs.** Tibia I with distal ventral spur with moderately long conical megaspine; microspur absent, upper megaspine long curved. Distal scapolate half of metatarsi I, II, incrassate, pallid; all tarsi ventrally pallid. Line of short conical setae intermixed with spines on dorsal midline.

Thorn spines absent; few short stronger on prodorsal femora II, IV, distally. Preening combs: 1 of 3 distinct setae on retroventral III, IV.

	I	II	III	IV	Palp
Femur	3.40	3.13	3.07	4.07	1.73
Patella	2.07	1.80	1.53	1.73	1.13
Tibia	2.67	2.33	2.07	3.47	1.33
Metatarsus	2.27	2.00	2.40	3.33	-
Tarsus	1.33	1.27	1.20	1.33	0.80
Total	11.74	10.53	10.27	13.93	4.99

*Scopula*. Metatarsi: I, II, distal half, hairs short, sparse, entire; III, IV, small cluster in distal 1/4 (III) to 1/6 (IV), divided by setal band. Tarsi: I, II, full, sparse, entire, hairs short; III, IV, divided by wide setal band 6-10 (III), 10-15 (IV).

*Spines*. I: fe p2, d4, pa 0, ti p2 + megaspine, v3 + megaspine, me p2. II: fe p2, d4, pa 0, ti p2, v5, me p1 long. III: fe p4, d6, r3, pa p1, v1, ti p2, d2, r2, v8, me p3, d2, r4, v6. IV: fe d3, r2, pa v1, ti p2, d2, r3, v10, me p4, d4, r6, v7. Palp: fe p1, d1, pa 0, ti p1, v1.

*Claws*. c.4 (IV)-6 (I) teeth in each of two slightly flared rows on claws; claws as high as tufts; tufts as high as (I) or clearly higher (IV) tarsi.

*Trichobothria*. Two rows, each of c.7 for length of tibiae; c.8 on metatarsi in curving row; no clavate and c.15 filiform on tarsi.

*Palp*. Bulb pyriform, widening to form one large ridge with two distinct keels; keels spiral almost transversely to short embolus; cymbium with two dissimilar lobes, terminal division; retrolateral face of cymbium slightly concave.

*Spinnerets*. PMS entirely absent. Basal, middle, apical, total segments of PLS, 0.41, 0.21, 0.10, 0.72 long, respectively.

#### DISTRIBUTION

SE of Koonalda Station, SW SA.

*Synothele longbottomi* sp. nov.  
(Figs 120, 136, Table 10)

#### MATERIAL EXAMINED

TYPE, Holotype ♂, Mt Cooke, 32°25'S 116°18'E, WA, pitfall traps, 24 Apr-15 May 1991, MSH, JW, WAM 91/1431.

#### DIAGNOSIS

Males most closely resemble those of *S. michaelsoni* in the form of the tibial spur and size of posterior median spinnerets and differ in lacking a serrate keel distally on the embolus.

PMS minute. Rastellum absent. Eye group very long, quadrangular. FEMALES. Unknown. MALES. One row of teeth on claws of I, none on leg IV. Intercheliceral tumescence absent. Tibia

I with short strong conical spur distally, with long broad sinuous megaspine; microspur small, slender, with sinuous megaspine. Palpal bulb short pyriform with short embolus with two low distally twisted keels lacking strong serration; retrolateral face of cymbium straight.

#### ETYMOLOGY

For Mr Alan F. Longbottom, a tireless collector of snails, spiders, and minerals for the Western Australian Museum, and also of the holotype of *Aureocrypta katersi*.

#### DESCRIPTION

HOLOTYPE MALE WAM 91/1431

Carapace 4.28 long, 3.44 wide. Abdomen 4.32 long, 2.84 wide. Total length, 9.

*Colour*. Carapace, chelicerae, and legs yellow brown, legs not banded. Abdomen dorsally brown with c.60 large pallid areas some forming paired diagonal bands posteriorly; ventrally pallid with fine brown bands in two transverse line in front of spinnerets, triangular area laterally, and fine speckling around inner edge of posterior book-lungs.

*Carapace*. Pilosity: uniform strong cover of long black setae; striae anterior pair wide, glabrous, rest indistinct, narrow. Bristles: 4 erect black beside posterior striae; 10 long thick anteromedially; 4 thick and 2-4 finer between PME, and 4 long thick and few finer between ALE; light pile of long silver hair and long strong curved brown bristles on lateral margins. Fovea short, straight with ends enlarged anteriorly.

*Eyes*. Tubercle low, distinct. Group occupies 0.34 of head-width; front width, back width, length, 23, 32, 27, respectively. MOQ front width, back width, length, 20, 21, 16, respectively. AME:ALE:PME:PLE, 9:9:6:9. Eye interspaces: AME-AME, 0.6; AME-ALE, 0.7; ALE-PLE, 1.6; PME-PME, 1.2; PME-PLE, 0.1; ALE-ALE, 0.9.

*Chelicerae*. Broad band of long black bristles prodorsally, laterally a narrow band of shorter bristles. Rastellum absent. Intercheliceral tumescence not evident. Furrow promargin with c.8 small spaced teeth, basomesally none evident.

*Labium*. 0.25 long, 0.68 wide; narrow with narrow glabrous band, 5-6 setae in irregular line behind it then narrow band of 10-12 fine setae. Labiosternal suture a narrow continuous groove.

*Maxillae*. 1.05 long in front, 1.40 long behind, 0.63 wide; with 10 spindle-shaped cusps in inner angle. Heel distinctly produced; anterior lobe short, indistinct.

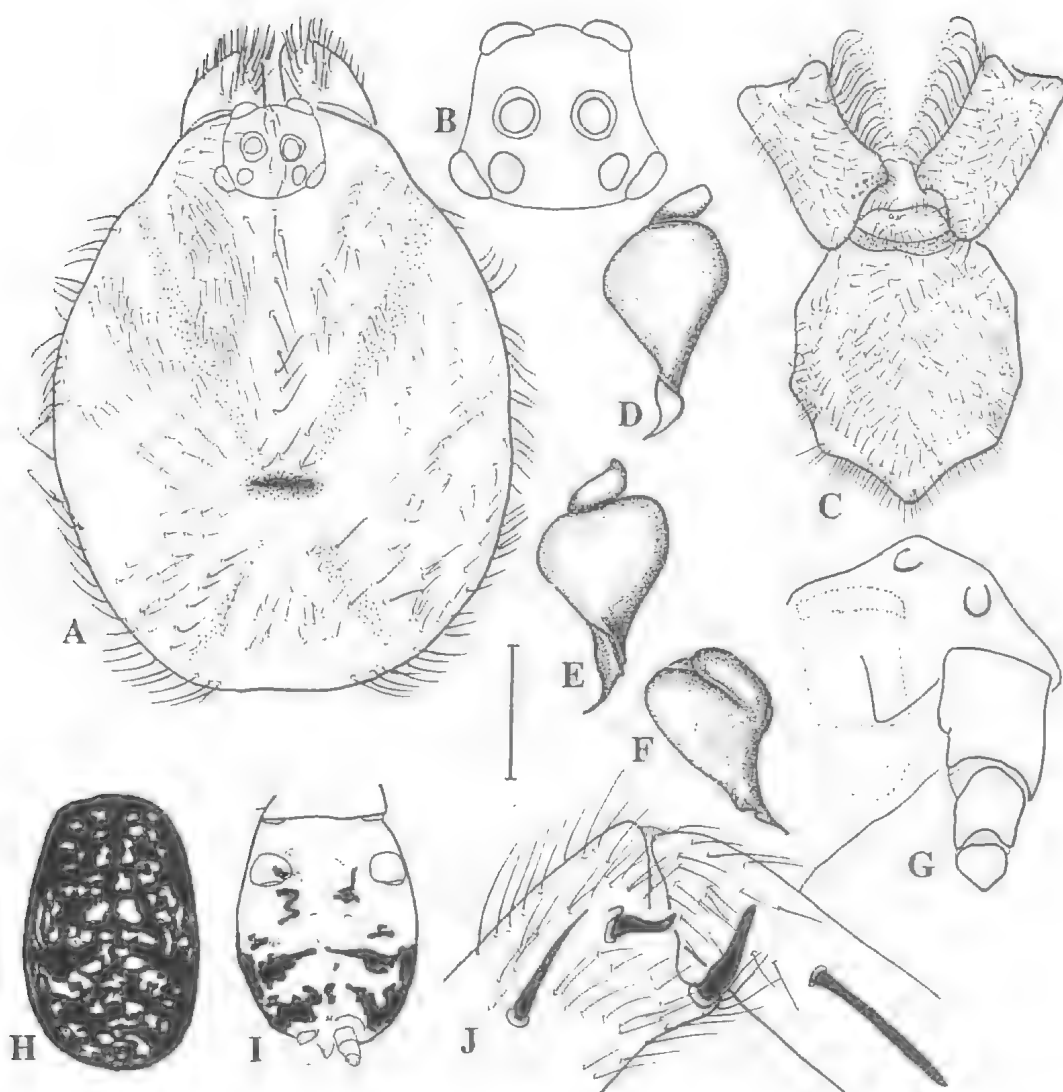


FIG. 136. *Synothele longbottomi* sp. nov., holotype ♂ (WAM 91/1431). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, sternum, maxillae & labium, ventral view; D-F, palpal bulb, retrolateral (F), ventral (E) & prolateral views (D); G, spinnerets, ventral view; H, I, abdomen, dorsal (H), ventral view (I); J, tibia & metatarsus I, ventral right, prolateral view. Scale line = 1mm (A, C); 2mm (H, I); 0.5mm (B, D-G, J).

**Sternum.** 2.08 long, 1.85 wide. Sigilla all small, similar, oval, marginal.

	I	II	III	IV	Palp
Femur	3.20	2.72	2.72	3.76	1.88
Patella	2.04	1.76	1.40	1.76	1.20
Tibia	2.48	2.04	1.76	3.04	1.24
Metatarsus	1.76	1.68	2.12	3.68	-
Tarsus	1.28	1.20	1.24	1.48	0.68
Total	10.76	9.40	9.24	13.72	5.00

**Legs.** Tibia I with short strong conical spur distally, apex with long broad sinuous

megaspine; microspur small, slender, pressed hard against sinuous megaspine. Preening combs and thorn spines absent. Scopulate surfaces pallid, incrassate.

**Scopula.** Metatarsi: I, II, thin, in distal 1/3, entire; III, 2 small divided clusters in distal 1/5; IV, absent, save for two small groups in distal 1/8. Tarsi: I, II, full, hairs short, moderately dense, entire; III, entire, setal band basally narrow becoming wider distally to 6-8 wide; IV, thin, hairs

long, sparse, equally and widely divided by wide setal band 8-10 wide.

**Spines.** I: fe p1, d4, pa 0, ti p2 + megaspine, v4 + megaspine, me p1. II: fe p1, d4, pa 0, ti p2, v5, me p1, v1. III: fe p2, d5, r2, pa p2, r1, v1, ti p2, d1, r2, v9, me p3, r4, v8. IV: fe p1, d4, r1, pa r1, ti p2, d1, r3, v8, me p5, r4, v8. Palp: fe p1, d5, pa 0, ti p2, v2.

**Claws.** 6-8 long teeth in outer edge on claws of leg I, and slightly smaller than tufts; claws of leg IV bare.

**Trichobothria.** Two rows, each of c.6-8 for length of tibiae; c.10 on metatarsi in slightly curving row; 9 small filiform, no clavates, on tarsi.

**Palp.** Bulb short pyriform with short embolus with two low distally twisted keels lacking strong serration; retrolateral face of cymbium straight.

**Spinnerets.** PMS 0.13 long, 0.08 wide, 0.17 apart, and c.0.25 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 0.50, 0.30, 0.15, 0.95 long, respectively.

#### DISTRIBUTION & HABITAT

Mt Cooke, southeast of Perth, Southwest WA, an area of Marri (*Eucalyptus calophylla*) Jarrah (*E. marginata*) woodland on laterite soil.

*Synothele lowei* sp. nov.  
(Figs 120, 137, 138, Table 9)

#### MATERIAL EXAMINED

**TYPES.** Holotype ♂, c.19 km N. of Bullsbrook, 31°30'S 116°00'E, no collection date, GL, WAM 90/2011; allotype ♀, Chittering to Pearce Air Force Base, 31°30'S 116°00'E, no collection date, GL, WAM 89/375. Both in WA.

#### DIAGNOSIS

Males of *S. lowei* differ from those of *S. michaelsoni* in lacking the upper megaspine and microspur on tibia I; ♀♀ differ from those of *S. pectinata* in the smaller claws on leg I.

PMS absent, represented only by tufted mounds. Rastellum low aspinose mound. Eye group moderately long, clearly wider behind than in front. **FEMALES.** All paired claws bare; claw on I about half size of those on IV. Basifemoral thorns and preening combs present. Femora-patellae III prolaterally only with conical setae. Scopula scattered distally on metatarsi III. Spermathecae two, a broad low mound ectally elevated with slender ectal lobe distally expanded. **MALES.** Two rows of teeth on claws of I, bare on IV. Tibia I with low spur and long apical megaspine; prolateral megaspine and microspur

absent. Bulb squat pyriform tapering quickly to doubly flanged twisted embolus. Intercheliceral tumescence absent. Scopulate area of metatarsi I, II incrassate. Femoral spines strong.

#### ETYMOLOGY

For Dr G.H. Lowe, the collector and contributor of many valuable specimens to the Western Australian Museum.

#### DESCRIPTION

**HOLOTYPE MALE** WAM 90/2011

Carapace 4.76 long, 4.16 wide. Abdomen 4.60 long, 3.84 wide. Total length, 10.

**Colour.** Carapace orange brown, chelicerae dark orange brown, and legs orange brown not annulated. Abdomen dorsally brown with continuous paired white areas diagonally forming narrow brown chevrons; ventrally brown with few small brown areas near posterior booklungs, laterally and near spinnerets.

**Carapace.** Pilosity: adpressed brown hairs form light cover dense but not obscuring cuticle on caput and posterior striae, elsewhere thinner cover; uniform cover of short black bristles; striae indistinct, narrow, hirsute. Bristles: 6-8 erect black beside posterior striae; 9 long anteromedially and band of shorter thinner beside caput; 5 long thick and few finer between PME, and 1 distinct long thick curved and 6-8 finer between ALE; single line of long brown curved bristles and light pile of golden brown hairs on lateral margins. Fovea short, slightly procurved.

**Eyes.** Tubercle raised. Group occupies 0.34 of head-width; front width, back width, length, 29, 36, 32, respectively. Back row straight, MOQ front width, back width, length, 22, 22, 18, respectively. AME:ALE:PME:PLE, 10:11:5:11. Eye interspaces: AME-AME, 0.6; AME-ALE, 0.6; ALE-PLE, 1.4; PME-PME, 1.3; PME-PLE, 0.2; ALE-ALE, 1.0.

**Chelicerae.** Small, wide band of long brown bristles and long golden brown hairs prodorsally, laterally a narrow band of golden brown hairs. Rastellum absent, weak setae near fang. Furrow promargin with 8 moderately large spaced teeth, basomesally with 8-10 granules. Intercheliceral tumescence absent.

**Labium.** 0.35 long, 0.75 wide. Labiosternal suture narrow.

**Maxillae.** 1.30 long in front, 1.60 long behind, 0.75 wide; with 17-18 pointed cuspules in inner angle. Heel rounded; anterior lobe acute, distinct.

**Sternum.** 2.58 long, 2.10 wide. Sigilla all small, oval, marginal.

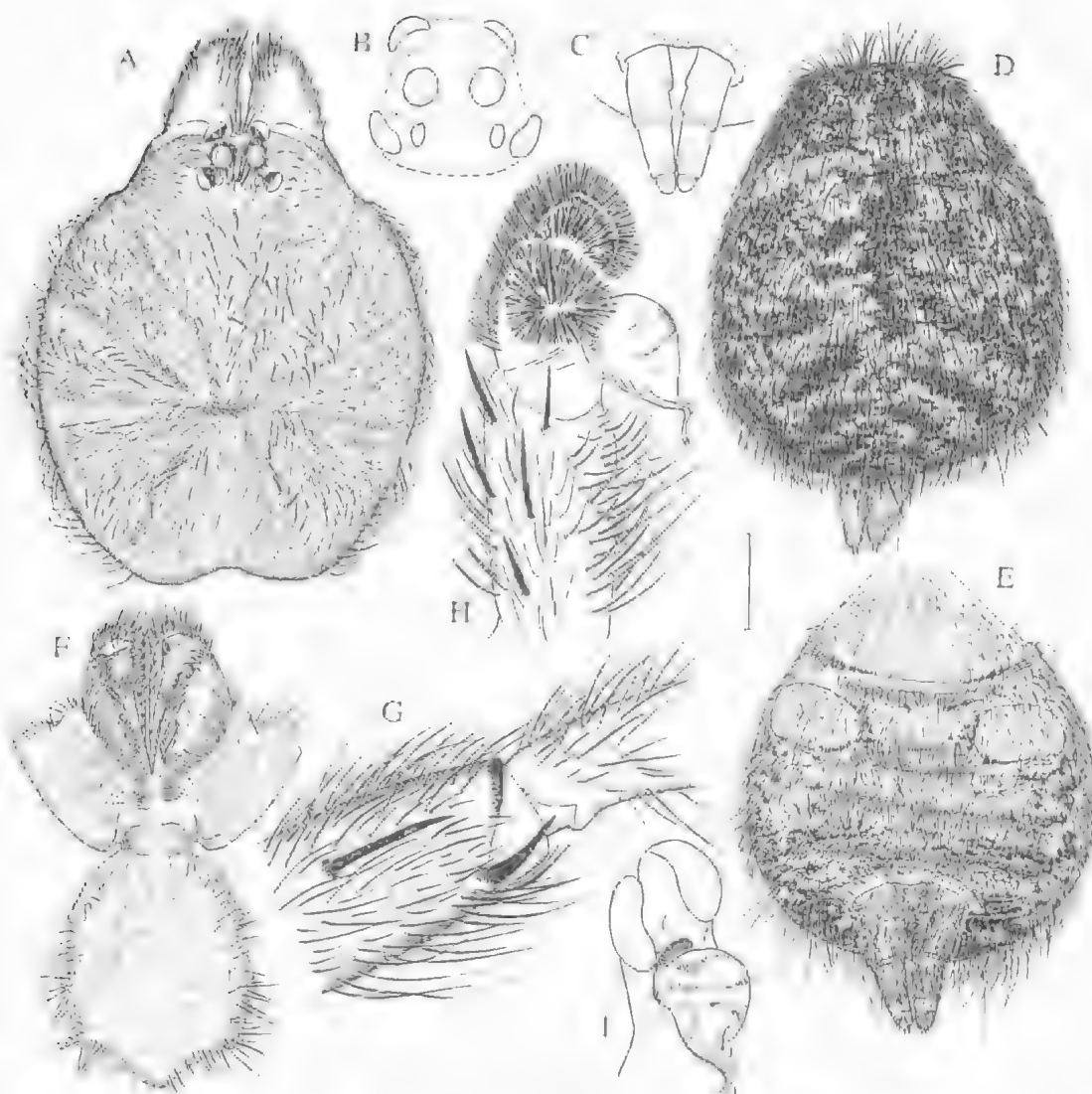


FIG 137. *Synothela lowei* sp. nov., holotype ♂ (WAM 90/2011). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, spinnerets, ventral view; D, E, abdomen, dorsal (D), ventral view (E); F, chelicerae, sternum, maxillae & labium, ventral view; G, tibia & metatarsus I, prolateral view; H, cymbium & palpal bulb, prolateral view; I, palpal bulb, ventral view. Scale line = 1mm (A, C-F); 0.5mm (B, G-I).

**Legs.** Tibia I with low slightly raised spur on distal proventral face with short upcurved megaspine; microspur and megaspine absent. Thorn spines and preening combs absent. Scopulate surface of metatarsi I, II pallid and incrassate, and of tarsi I-IV pallid.

**Scopula.** Metatarsi: I, II, distal 1/2-1/3, thin, entire; III, in distal 1/4, mixed with setae, thin; IV, two sparse triangles in distal 1/8. Tarsi: I, II, full, moderately dense, entire, save for line of pallid setae not parting scopula; III, long, thin, narrowly

divided by setal band 4-6 wide; IV, like III but setal band 6-10 wide.

	I	II	III	IV	Palp
Femur	4.20	3.80	3.48	4.88	2.52
Patella	2.32	2.16	1.84	2.08	1.48
Tibia	2.96	2.56	2.28	2.60	1.48
Metatarsus	2.60	2.20	2.40	4.08	-
Tarsus	1.60	1.48	1.28	1.60	1.08
Total	13.68	12.20	11.28	15.24	6.56

**Spines.** Femoral spines strong, I: fe p1, d7, r1, pa 0, ti p3, v5 + megaspine, ine p1, r1, v1 basal.



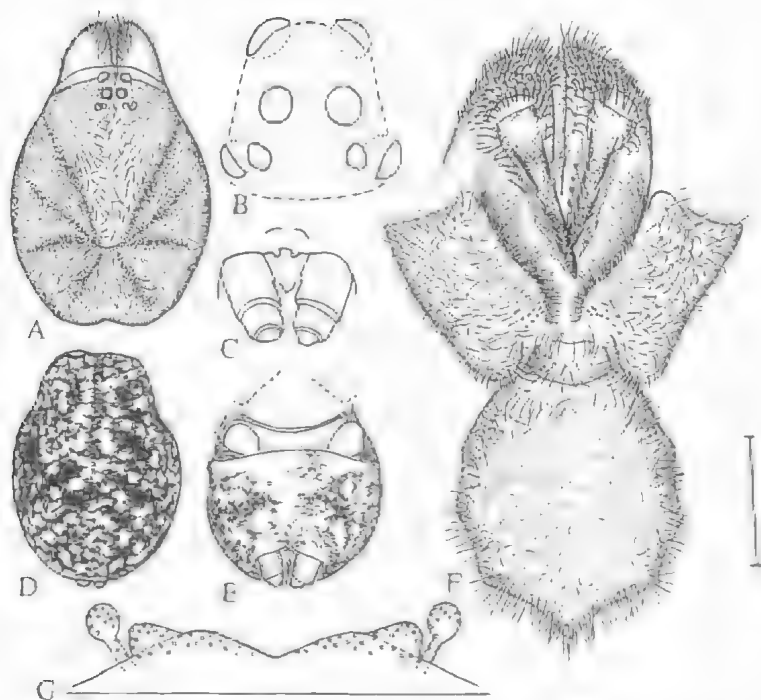


FIG. 138. *Synothele lowei* sp. nov., allotype ♀ (WAM 89/375). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, spinnerets, ventral view; D, E, abdomen, dorsal (D), ventral view (E); F, sternum, maxillae, labium & chelicerae, ventral view; G, spermathecae. Scale line = 2mm (A, D, E); 1mm (C, F); 0.5mm (B); 0.25mm (G).

II: fe p2, d6, r1, pa p2, ti p3, v7, me p1, v1 basal.  
III: fe p4, d6, r3, pa p2, r1, ti p2, d1, r2, v9, me p2, r2, v6. IV: fe p1, d8, r1, pa r1, v1, ti p2, r2, v9, me p4, r4, v7. Palp: fe p1, d3, pa 0, ti p2, v3.

**Claws.** 3-4 short teeth on claws in two rows (I), no teeth on IV. On I slightly smaller than tufts, not smaller than on IV.

**Trichobothria.** Two rows, each of c.10 for length of tibiae; c.12 on metatarsi in slightly curved row; c.15 filiform on tarsi, no clavates evident.

**Palp.** Bulb squat pyriform tapering quickly to doubly flanged twisted embolus; cymbium distally constricted so retrolateral face is concave.

**Spinnerets.** PMS represented only by two small mounds each with a tuft of hair. PMS 0.05 long, 0.04 wide, 0.17 apart, and c.0.08 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 0.75, 0.38, 0.13, 1.26 long, respectively.

#### ALLOTYPE FEMALE WAM 89/375

Carapace 4.28 long, 3.32 wide. Abdomen 3.88 long, 2.88 wide. Total length, 9.

**Colour.** Carapace, chelicerae, and legs orange brown, not annulated. Abdomen dorsally brown with moderately large white mottling in equal parts and forming no pattern; ventrally pallid save for brown areas beside posterior booklungs, in front of spinnerets, and laterally.

**Carapace.** Pilosity: light cover of golden brown hairs and fine bristles on caput and interstrial ridges; striae distinct, narrow. Bristles: 4-6 erect black beside posterior striae; c.11 anteromedially and several shorter in band beside caput; 1 long thick behind eye group and 4 long and few finer between PME, and 4 long thick and few finer between ALE; few hairs on lateral margins. Fovea short, procurved.

**Eyes.** Lateral border of tubercle indistinct, AME on slope. Group occupies 0.26 of head-width; front width, back width, length, 21, 30, 26, respectively. Back row recurved. MOQ front width, back width, length, 18, 19, 14, respectively. AME:ALE:PME:PLE, 7:10:5:7. Eye interspaces: AME-AME, 0.6; AME-ALE, 1.0; ALE-PLE, 2.1; PME-PME, 1.7; PME-PLE, 0.3; ALE-ALE, 0.9.

**Chelicerae.** Narrow sparse band of few long and many shorter bristles prodorsally, laterally few short setae in low band. Rastellum weak, a low mound with many short curved bristles. Furrow promargin with 7 small spaced teeth, basomesally with 10-15 granules.

**Labium.** 0.28 long, 0.65 wide. Labiosternal suture a wide continuous groove.

**Maxillae.** 1.13 long in front, 1.45 long behind, 0.75 wide; with 10-12 cuspules in inner angle. Heel broad; anterior lobe small.

**Sternum.** 2.18 long, 1.78 wide. Sigilla small, oval, marginal.

**Legs.** 2-5 basifemoral thorns on I, II, IV. Thorn spines absent, but many short conical setae over prolateral patellae III, IV. Preening combs: 1 of 2-3 setae on retroventral III, IV.



	I	II	III	IV	Palp
Femur	2.20	1.92	1.84	2.80	1.88
Patella	1.76	1.64	1.36	1.60	1.28
Tibia	1.52	1.28	1.12	2.08	1.00
Metatarsus	1.04	0.96	1.24	2.48	-
Tarsus	0.72	0.80	0.88	1.08	0.92
Total	7.24	6.60	6.44	10.04	5.08

*Scopula*. Metatarsi: I, thin, divided in distal half; II, two small distal triangles; III, IV, few scattered setae. Tarsi: I, II, hairs long, full, moderately dense, entire save for setal band 2-4 wide; III, IV, divided by setal band 8-10 wide, almost only on lateral surfaces.

*Spines*. I: fe p1, d5w, pa 0, ti 0, me v1w. II: fe p1, d4w, pa 0, ti p1, me v1. III: fe d1, r1, pa p2, r1, ti p1, r2, v6, me p2, r2, v5. IV: fe d3w, r1, pa 0, ti r2, v9, me p3, r3, v6. Palp: fe p1, d1, pa 0, ti p1w, v3.

*Claws*. Very small (I) to twice as large as on I (IV) and visible above tufts; all bare; palpal claw very small.

*Trichobothria*. Two rows, each of c.7 for length of tibiae; c.8 on metatarsi in strongly curving row; c.3 small clavate and c.10 filiform on tarsi.

*Spermathecae*. Two, a broad low mound ectally elevated with slender ectal lobe distally expanded.

*Spinnerets*. PMS represented by two minute hirsute fleshy triangular lobes, 0.04 long, 0.03 wide, 0.03 apart, and c.0.06 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 0.45, 0.13, 0.05, 0.63 long, respectively.

#### DISTRIBUTION

North of Bullsbrook, SW WA.

#### REMARKS

The legs of the ♂ are quite spinose, especially the dorsal femora and retrolateral metatarsi I

#### *Synothele meadhunteri* sp. nov.

(Figs 119, 139, Table 9)

#### MATERIAL EXAMINED

*TYPES*. Holotype ♂, Queen Victoria Spring, 30°26'S 123°34'E, WA, 14 Jun 1989, DM, WAM 89/369; 3 paratype ♂♂, Olympic Dam site, Roxby Downs [30°42'S 136°46'E], N of Woomera, SA, Mar-Jun 1987, A. Smith, SAMA N1992241.

#### DIAGNOSIS

Males differ from those of *S. lowei* in the many fine keels on the bulb.

PMS absent, save for two small setose mounds. Rastellum low aspinose mound. Eye group long, slightly wider behind than in front. FEMALES

Unknown, MALES. No teeth on claws of legs I, IV. Tibia I with low slender spur and long slender upcurved megaspine and several long curved setae at base; upper megaspine and microspur absent. Bulb small, distal portion gradually tapered but broad, two keels distally with many fine ridges on both faces of bulb; embolus short, hooked. Intercheliceral tumescence small, pallid, setose. Metatarsi I, II not incrassate.

#### ETYMOLOGY

For Mr Derek Mead-Hunter, the collector and a spider and reptile enthusiast who has donated many valuable specimens to the Western Australian Museum.

#### DESCRIPTION

HOLOTYPE MALE WAM 89/369

Carapace 5.00 long, 4.19 wide. Abdomen 5.31 long, 3.44 wide. Total length, 11.

*Colour* (probably freshly moulted). Carapace, chelicerae, and legs cream, legs not annulated. Abdomen dorsally brown with large white mottling, especially posteriorly; ventrally pallid with few brown flecks.

*Carapace*. Pilosity: uniform cover of long grey hairs, densest on caput, and black bristles; only anterior striae distinct. Bristles: 4 short erect black beside posterior striae; c.13 short anteromedially and few in band beside caput; 5 long thick and 4-6 finer between PME, and 5 long thick and few finer between ALE; bush of long grey hairs and band of long black bristles on lateral margins. Fovea short, slightly procurved.

*Eyes*. Tubercle distinct. Group occupies 0.31 of head-width; front width, back width, length, 47, 60, 57, respectively. Back row recurved. MOQ front width, back width, length, 46, 43, 32, respectively. AME:ALE:PME:PLE, 24:18:10:18. Eye interspaces: AME-AME, 0.3; AME-ALE, 0.4; ALE-PLE, 1.1; PME-PME, 1.2; PME-PLE, 0.2; ALE-ALE, 0.7.

*Chelicerae*. Broad band of few long and many short black bristles prodorsally, laterally a broad setose area. Rastellum a low mound with 8-10 short thick bristles on inner corner. Intercheliceral tumescence a small pallid setose area. Furrow promargin with 3 large and 3 smaller teeth, basomesally no teeth evident.

*Labium*. 0.38 long, 0.66 wide. Labiosternal suture a broad shallow groove.

*Maxillae*. 1.28 long in front, 1.69 long behind, 0.66 wide; with 7-9 blunt cuspules in inner angle. Heel rounded; anterior lobe distinct acute.

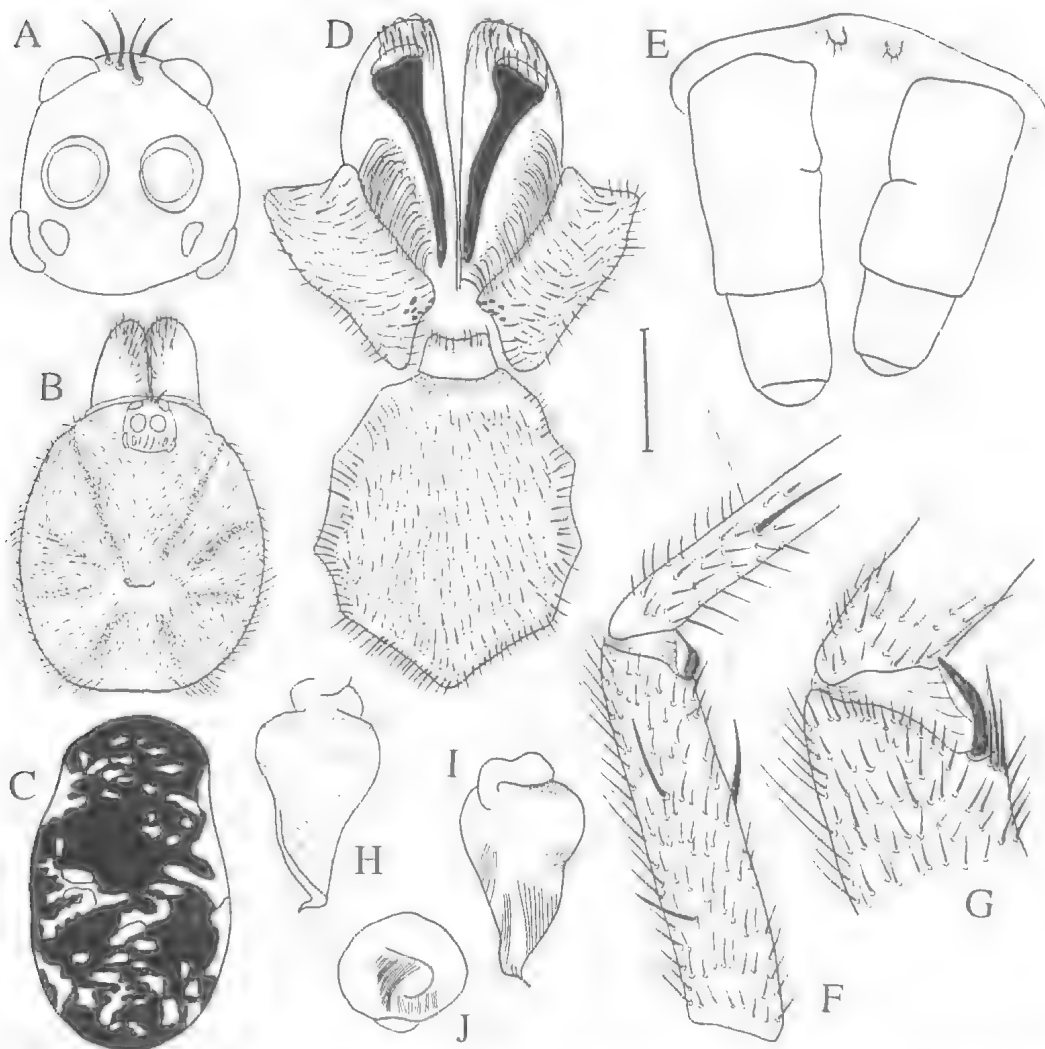


FIG. 139. *Synothele meadhunteri* sp. nov., holotype ♂ (WAM 89/369). A, eye group, dorsal view; B, carapace & chelicerae, dorsal view; C, abdomen, dorsal view; D, chelicerae, sternum, maxillae & labium, ventral view; E, spinnerets, ventral view; F, tibia & metatarsus I, prolateral view; G, tibial spur; H-J, palpal bulb, retrolateral (H), ventral (I) & posterior (J). Scale line = 1mm (D, F); 2mm (B, C); 0.5mm (A, E, G-J).

**Sternum.** 2.59 long, 2.19 wide. Sigilla all small, oval, marginal.

	I	II	III	IV	Palp
Femur	4.25	4.19	4.19	5.63	2.19
Patella	2.31	2.19	1.81	2.25	1.31
Tibia	3.00	2.88	2.94	4.63	1.38
Metatarsus	3.00	2.81	3.44	5.13	-
Tarsus	2.06	2.00	2.13	2.50	0.88
Total	14.62	14.07	14.51	20.14	5.76

**Legs.** Tibia I with low slender spur and long slender upcurved megaspine and several long curved setae at base; upper megaspine and microspur absent. Thorn spines absent. Preening

combs: 1 of 3 weak setae on retroventral IV. Ventral tarsi I-III collapsed, probably pallid.

**Scopula.** Metatarsi: I, II, hairs long, thin, mixed with setae, in distal half; III, two small triangular areas of setae in distal 1/6; IV, absent. Tarsi: I-III, hairs short, thin, presumably entire; IV, very sparse, widely divided into two narrow bands by setal band over ventral surface.

**Spines.** I: fe p1, d3, pa 0, ti p2, v3 + megaspine, me p1. II: fe p1, d1, pa 0, ti p2, v5, me p1. III: fe p1, d3, r2, pa p1, ti p1, r2, v7, me p2, r3, v6. IV:

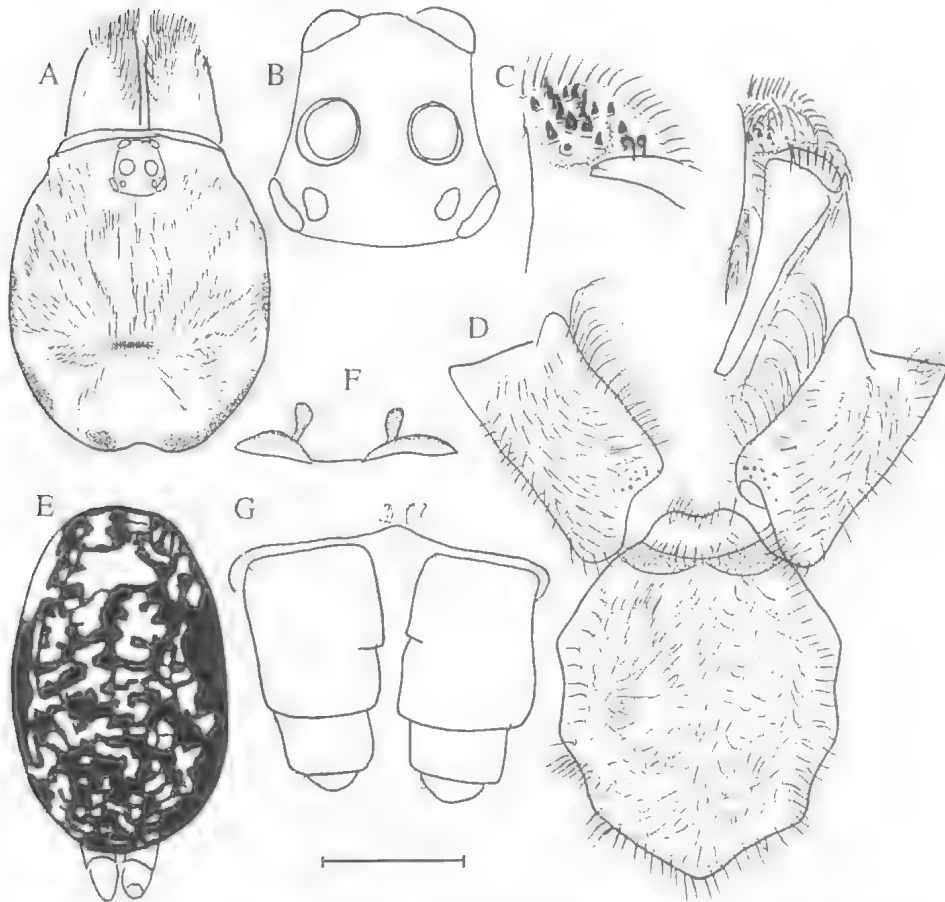


FIG. 140. *Synothele moonabie* sp. nov., holotype ♀ (SAMA1992239). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, apical chelicerae, ventral view; D, sternum, maxillae, labium & chelicera, ventral view; E, abdomen, dorsal view; F, spermathecae; G, spinnerets, ventral view. Scale line = 2mm (A, E), 1mm (D); 0.5mm (B, C, F, G).

fe d3, r3, pa 0, ti p1, r2, v10, me p2, r5, v10. Palp: fe p1, pa 0, ti p3.

*Claws.* All bare; on I, claws half size of tufts; on IV, claws c.equal to tufts.

*Trichobothria.* Two rows, each of c.6 for half length of tibiae; c.12 on metatarsi in curving row; c.2 small clavate and c.14 filiform on tarsi.

*Palp.* Bulb small, distal portion gradually tapered but broad, two keels distally with many fine ridges between them on both faces of bulb; embolus short hooked; retrolateral face of cymbium concave.

*Spinnerets.* PMS represented only by two small setose mounds. Basal, middle, apical, total segments of PLS, 0.88, 0.33, 0.09, 1.30 long, respectively.

#### DISTRIBUTION

Queen Victoria Spring, WA, and Roxby Downs, north of Woomera, South Australia.

#### REMARKS

The ♂♂ from Roxby Downs have collapsed abdomens so it is not possible to discern minute PMS; one possible lobe is evident in one ♂. However, they share all other diagnostic characters. This species has the most disjunct distribution of any species in this monograph.

*Synothele moonabie* sp. nov.  
(Figs 10E, 11C, 15F, 119, 140. Table 9)

#### MATERIAL EXAMINED

TYPES. Holotype ♀, 10km SW of Moonabie [33°16'S 137°50'E], E of Iron Duke, SA, mallee, 24 Mar 1987,

D.C. Lee, D. Hirst, SAMA N1992239; 6 ♀ paratypes, same data but SAMA N1992240.

#### DIAGNOSIS

Females differ from those of *Ozlerupta pulmarum* by palpal claw being much smaller and from those of most other species of *Synothele* in ♀♀ having all leg claws of similar size.

PMS minute tufted mounds. Rastellum absent. FEMALE. Paired claws higher than tufts. Basifemoral thorns absent. Preening combs present. Maxillae flat. 2-3 thorns high and back on cheliceral interface. Fovea straight. Thorn spines in strong band femora (bristles on patellae) III, IV. Spermathecae a pair of antennate domes, lateral lobe outcurved. MALES. Unknown.

#### DESCRIPTION

HOLOTYPE FEMALE SAMA N1992239

Carapace 5.27 long, 4.13 wide. Abdomen 5.40 long, 3.33 wide. Total length, 12.

**Colour.** Carapace yellow brown with darker and lighter areas on caput giving striking pattern, margins of carapace brown, chelicerae dark orange brown, and legs yellow brown, not annulated but small brown markings laterally at base of legs tibiae and diagonal lines basally on metatarsi III, IV. Abdomen dorsally brown with irregular white mottling forming vague chevron pattern; ventrally pallid with small brown flecks near spinnerets.

**Carapace.** Pilosity: fine grey hairs and short black bristles radiating in lines on interstrial ridges; caput with uniform cover of fine hairs and bristles medially; striae indistinct, narrow. Bristles: c.3 erect black beside posterior striae; c.19 in two rows anteromedially and c.30 in band beside caput; c.8 long thick and few finer between PME, and c.10 long thick and 4-6 finer between ALE; fine hairs on lateral margins, bristles on lower cuticular shelf. Fovea short, shallow, straight.

**Eyes.** Tubercle distinct. Group occupies 0.26 of head-width; front width, back width, length, 41, 52, 51, respectively. Back row recurved. MOQ front width, back width, length, 38, 38, 28, respectively. AME:ALE:PME:PLE, 15:16:9:15. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.8; ALE-PLE, 1.9; PME-PME, 1.7; PME-PLE, 0.1; ALE-ALE, 0.9.

**Chelicerae.** Few long and many short bristles in narrow band prodorsally, laterally short setae. Rastellar mound absent but cluster of 30-40 short thorn-like bristles across distal edge, 2-3 short strong spine-like bristles in upper inner back

corner of each chelicera. Furrow promargin with 7 widely spaced teeth, basomesally with 5 small teeth and 6-8 granules in basal third.

**Labium.** 0.40 long, 0.80 wide; transverse glabrous ridge with 5 long strong bristles behind it. Labiosternal suture two separate sigilla.

**Maxillae.** With noticeably flat ventral face; 1.47 long in front, 1.80 long behind, 0.93 wide; with 8-9 cuspules in inner angle. Heel broad, indistinct; anterior lobe small, distinct.

**Sternum.** 2.53 long, 2.13 wide. Sigilla all small, oval, touching margin.

**Legs.** Basifemoral thorns absent but 1 (rarely 2-3) short thorn-like bristles basally on all leg femora. Bases of setae on front face of femora I, II and of palp enlarged and slightly raised. 1 thorn spine on prolateral patellae III; band of 30-40 small strong thorn spines also around distal edge of femora III, IV; adjacent patellae only with short strong bristles. Preening combs: 1 of 2 weak setae on retroventral III, IV.

	I	II	III	IV	Palp
Femur	3.20	2.80	2.67	3.60	2.33
Patella	2.33	2.00	1.67	2.00	14.87
Tibia	2.27	1.93	1.73	3.07	1.47
Metatarsus	1.73	1.67	2.00	3.40	-
Tarsus	1.13	1.13	1.20	1.53	1.20
Total	10.66	9.53	9.27	13.60	19.87

**Scopula.** Metatarsi: I, II, full, mixed with setae, hairs short; in two sparse triangles in distal 1/2 (III)-1/4 (IV). Tarsi: I, II, full, hairs short, divided by setal band 3-5 wide; III, IV, divided by narrow setal band c.8-12 wide.

**Spines.** I: fe p1, d2, pa 0, ti 0, me 0. II: fe p1, d2, pa 0, ti 0, me 0. III: fe p 30-40 thorns, d1, r2, pa 0, ti p1, r1, v5, me p2, r2, v5. IV: fe p 30-40 thorns, d1, r1, pa 0, ti r2, v5, me p2, r2, v6. Palp: fe p1, d4, pa 0, ti v3.

**Claws.** 2-3 short teeth (I) to no teeth (IV) medially on claws; claws evident above tufts; tufts slightly higher than diameter of tarsi; palpal claw about half height of tufts, bare.

**Trichobothria.** Two rows, each of c.9 for length of tibiae; c.10 on metatarsi in curved row; c.10-12 filiform on tarsi; c.8-10 erect black lanceolate setae along midline.

**Spermathecae.** A pair of antennate domes, lateral lobe outcurved.

**Spinnerets.** PMS evident only as two very small setose mounds on the sloping edges of the PLS bases. Basal, middle, apical, total segments of PLS, 0.71, 0.24, 0.08, 1.03 long, respectively.

#### DISTRIBUTION & HABITAT

Mallee, SW of Moonabie, E of Iron Duke, SA.

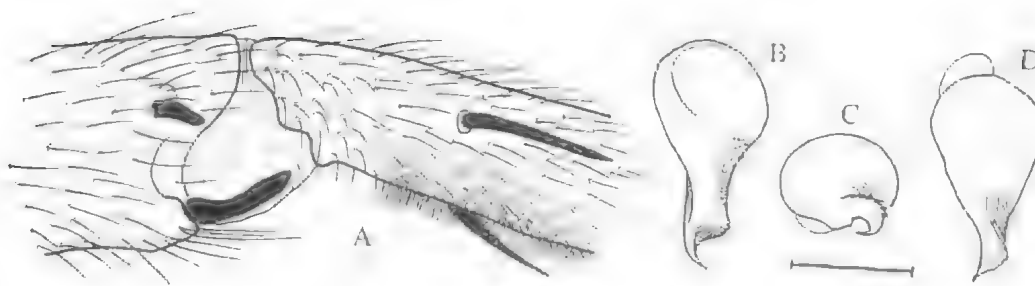


FIG. 141. *Synothele mullaloo* sp. nov., holotype ♂ (WAM 89/309). A, tibia & metatarsus I, prolateral view; B-D, palpal bulb, retrolateral (B), posterior (C) & ventral views. Scale line = 0.5 mm.

***Synothele mullaloo* sp. nov.**  
(Figs 120, 141. Table 10)

**MATERIAL EXAMINED**

TYPE. Holotype ♂, Mullaloo Beach, 4 km NNE, 31°47'S 115°44'E, WA, no collection date, A. Chapman, WAM 89/309.

**DIAGNOSIS**

Males differ from those of *S. michaelsoni* in having a distinct microspur on prolateral tibia I, the anterior slope of the spur lies back not forward, and an intercheliceral tumescence is present; also, the PMS of *S. mullaloo* are represented only by two small setose bumps.

PMS only setose bumps. Rastellum low aspinose mound. Eye group long, slightly wider behind than in front. FEMALE. Unknown. MALES. One row of teeth on claws of I, IV. Tibia I with low spur with short, almost straight, up-curved megaspine; microspur distinct, thumb-like, set against long straight megaspine. Bulb with narrow distal portion, two serrated and 3-4 narrow smooth keels converge at short curved embolus. Intercheliceral tumescence a small, pallid, setose area. Scopulate area of metatarsi I, II slightly incrassate.

**ETYMOLOGY**

From the native name of the type locality.

**DESCRIPTION**

**HOLOTYPE MALE WAM 89/309**

Carapace 4.31 long, 3.63 wide. Abdomen 4.38 long, 2.63 wide. Total length 9.

**Colour.** Carapace dark orange brown, caput with brown flanks, chelicerae and legs dark orange brown, not annulated. Abdomen dorsally brown with large irregular white maculations

forming barely discernible chevron pattern posteriorly; ventrally white with many scattered brown areas.

**Carapace.** Pilosity: few fine silver hairs with light pile of long brown hairs and long curved black bristles; only anterior striae distinct, rest narrow. Bristles: 6-8 erect black beside posterior striae; c.7 anteromedially and few shorter in hand beside caput; 6 long thick and few hairs between PME, and 7 long thick and fine hairs between ALE; broad band of long curved brown bristles and few hairs on lateral margins. Fovea short, straight.

**Eyes.** Tubercle distinct. Group occupies 0.31 of head-width; front width, back width, length, 37:56:53, respectively. Back row recurved. MOQ front width, back width, length, 41:41:29, respectively. AME:ALE:PME:PLE, 19:17:11:17. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.7; ALE-ALE, 0.5; PME-PLE, 0.1; PME-PME, 1.3; ALE-PLE 1.5.

**Chelicerae.** Broad band of many short curved brown bristles and few silver hairs prodorsally, laterally a broad setose area. Rastellum a low mound with 8-10 thick curved bristles on inner corner. Intercheliceral tumescence a small pallid setose area. Furrow promargin with 7 teeth, basomesally with 6 small teeth and 8-10 fine granules. Lyra absent.

**Labium.** 0.28 long, 0.78 wide. Labiosternal suture two broad sigilla medially joined.

**Maxillae.** 1.22 long in front, 1.63 long behind, 0.69 wide; with 9 blunt cuspules in inner angle. Heel broad; anterior lobe broad, distinct.

**Sternum.** 2.44 long, 2.09 wide. Sigilla posterior pair circular; other oval, small; all marginal.

**Legs.** Ventral surfaces of all tarsi pallid; scopulate surfaces of metatarsi I, II, pallid. Tibia I with low spur with short, almost straight, up-curved

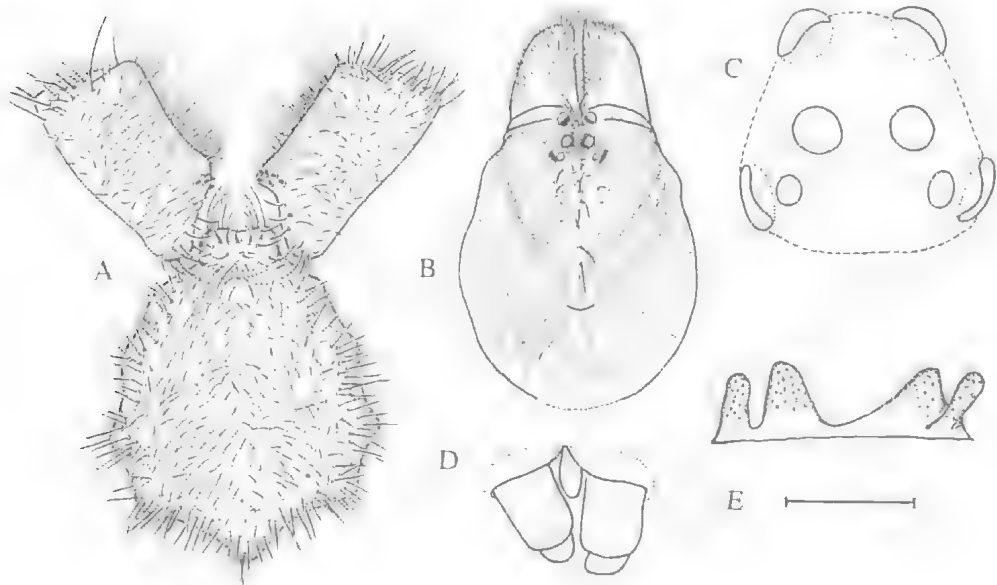


FIG. 142. *Synothele ooldea* sp. nov., holotype ♀ (SAMA1992242). A, sternum, maxillae & labium, ventral view; B, carapace & chelicerae, dorsal view; C, eyes, dorsal view; D, spinnerets, ventral view; E, spermathecae. Scale line = 2mm (B); 1mm (A, D); 0.5mm (C); 0.25mm (E).

megaspine, right tibia I also with second spine at base of ventral megaspine; microspur distinct, thumb-like, set against moderately long straight megaspine. Thorn spines absent. Preening combs: 1 of 3 weak setae on retroventral III, IV. Metatarsi I, II, slightly incrassate in distal third.

	I	II	III	IV	Palp
Femur	3.44	3.38	3.13	4.19	2.06
Patella	2.13	1.94	1.56	1.94	1.31
Tibia	2.56	2.31	1.94	3.25	1.25
Metatarsus	2.00	1.94	2.25	3.81	-
Tarsus	1.38	1.31	1.31	1.56	0.94
Total	11.51	10.88	10.19	14.75	5.56

**Scopula.** Metatarsi: I, II, thin, hairs short, in triangular pallid area in distal third; III, IV, few scattered hairs in triangular area in distal fourth (III) or fifth (IV). Tarsi: I, II, hairs short, full, entire; III, IV, hairs long, thin, divided by setal band 4-8 (III) or 12-15 (IV).

**Spines.** I: fe p1, d6, pa 0, ti p2 + megaspine, v3 + megaspine, me p1, v5. II: fe p2, d4, pa 0, ti p2, v5, me p1, v1. III: fe p2, d4, r3, pa p2, r2, v1, ti p2, d1, r2, v8, me p4, r2, v9. IV: fe p1, d4, r2, pa r1, v1, ti p2, r3, v11, me p3, r5, v12. Palp: fe p1, d5, pa 0, ti p4, v1.

**Claws.** 3-4 teeth in single medial row on legs I, IV; on I about half size of tufts, leg IV claws rise above tufts.

**Trichobothria.** Two rows, each of c.8 for length of tibiae; c.10-12 on metatarsi in curving row; c.2 small clavate and c.12 filiform on tarsi.

**Palp.** Bulb with narrow distal portion, two serrated and 3-4 narrow smooth keels converge at short curved embolus; retrolateral face of cymbium concave.

**Spinnerets.** PMS represented only by two small setose bumps, 0.006 long, 0.06 wide, 0.14 apart, and c.0.15 of basal PLS in diameter. PLS length of basal, middle, apical, and total articles 0.69, 0.28, 0.13, 1.10, respectively.

#### DISTRIBUTION

Mullaloo Beach, north of Perth, WA.

*Synothele ooldea* sp. nov.  
(Figs 119, 142, Table 9)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Ooldea [30°27'S, 131°50'E], SA, no date, A.M. Lea, SAMA N1992242.

#### DIAGNOSIS

Females differs from those of *S. goongarrie* in that each lobe of pair of spermathecae are set closer, leg claws are very small, and the posterior



median spinnerets lack any associated tuft of hairs.

PMS absent. Rastellum a low mound with c.10 slightly curved small spines. FEMALES. Teeth absent on all claws; claws on I about 1/3 size on IV. Basifemoral thorns absent. Femora-patellae III, IV with conical setae. No scopula on metatarsi III, IV. Preening combs present. Spermathecae two, each a pair of short close lobes. MALES Unknown.

#### DESCRIPTION

HOLOTYPE FEMALE SAMA N1992242

Carapace 5.20 long, 4.47 wide, Abdomen 5.27 long, 3.73 wide. Total length 11

**Colour.** Carapace, chelicerae, and legs light orange brown, not annulated. Abdomen dorsally dark brown with small white spots forming 4 pairs of brown chevrons down back; ventrally entirely pallid.

**Carapace.** Pilosity: light pile of long yellow brown hairs; striae indistinct. Bristles: none thickened beside posterior striae; 6 very long, thick anteromedially and c.4 long in band beside caput; 8 long and few finer between PME, and 6 long and few finer between ALE; fine hairs only on lateral margins. Fovea short, clearly procurved.

**Eyes.** Tubercle lateral and posterior edges sloped gradually. Group occupies 0.30 of head-width; front width, back width, length, 44, 66, 54, respectively. Back row recurved. MOQ front width, back width, length, 39, 46, 27, respectively. AME:ALE:PME:PLE, 14:15:7:18. Eye interspaces: AME-AME, 0.7; AME-ALE, 1.2; ALE-PLE, 2.1; PME-PME, 2.1; PME-PLE, 0.1; ALE-ALE, 1.1.

**Chelicerae.** Few long and many short bristles prodorsally, laterally sparsely covered with short fine setae. Rastellum a low mound with c.10 slightly curved small spines on distal inner corner, more longer spines laterally and above them. Intercheliceral face with 2-3 thorn-like setae posterodorsally. Furrow promargin with 6 spaced teeth, basomesally with 5 small teeth.

**Labium.** 0.35 long, 0.73 wide; two transverse glabrous depressions in front half separated by line of 5 long curved bristles; 4 such bristles also behind back area. Labiosternal suture two narrow sigilla joined medially.

**Maxillae.** 1.14 long in front, 1.56 long behind, 0.86 wide; ventral face slightly concave; with 5-6 cusps in inner angle. Heel slightly produced, rounded; anterior lobe broad, indistinct.

**Sternum.** 2.38 long, 2.06 wide. Sigilla all small, oval, marginal.

**Legs.** Basifemoral thorns absent but 2-3 short strong conical setae strictly on dorsal line of femora I, II, and palp. Thorn spines absent but long thorn setae prodorsally on femora and patellae III, IV. Preening combs: 1 of 3 strong setae on retroventral III, IV.

	I	II	III	IV	Palp
Femur	2.27	2.47	2.40	3.33	2.00
Patella	1.73	1.80	1.67	2.07	1.20
Tibia	1.47	1.53	1.53	2.60	1.00
Metatarsus	1.20	1.27	1.87	3.00	-
Tarsus	0.93	1.13	1.13	1.33	1.07
Total	7.60	8.20	8.60	12.33	5.27

**Scopula.** Metatarsi: I, II, thin, diagonal, in distal 1/2, divided; III, IV, absent. Tarsi: I, II, thin, hairs short, full, divided by setal band 2-3 wide; III, IV, thin, divided by wide setal band 6-8 (III), 8-10 (IV) wide.

**Spines.** I: fe p1, d6 (long curved bristles), pa 0, ti 0, me 0. II: fe p1, d5w, pa 0, ti 0, me 0. III: fe 0, pa 0, ti r1, v5, me p2, r2, v5. IV: fe d4w, r1w, pa 0, ti r2, v10, me p2, r4, v8. Palp: fe p1 d4 long bristles, pa 0, ti p1, v4.

**Claws.** All bare; very small, c. 1/3 height of tufts (I, II), to larger (III, IV) but still slightly smaller than tufts; claw tufts slightly higher than tarsi; palpal claw very small.

**Trichobothria.** Two rows, each of c.8 for length of tibiae; c.5 for half length on metatarsi I, II, c.10 for length of IV in curving row; c.13 filiform on tarsi, none clavate.

**Spermathecae.** Two, each a pair of short close lobes.

**Spinnerets.** PMS entirely absent. Basal, middle, apical, total segments of PLS, 0.71, 0.22, 0.06, 0.99 long, respectively.

#### DISTRIBUTION

Ooldea, eastern Nullarbor Plain, SA.

#### *Synothele parifusca* (Main, 1954) (Figs 119, 143, Table 10)

*Encyocrypta parifusca* Main, 1954, p. 37; Brignoli, 1983, p. 130.

*Synothele parifusca* (Main); Main, 1985, p. 14; Platnick, 1989, p. 95.

#### MATERIAL EXAMINED

TYPES. Holotype, penultimate ♂, Mondrain Is., Recherche Archipelago, WA, V. Serventy, 1950, WAM 82/109; ♀ paratype, Twin Peaks Is., WAM 82/110; both examined.

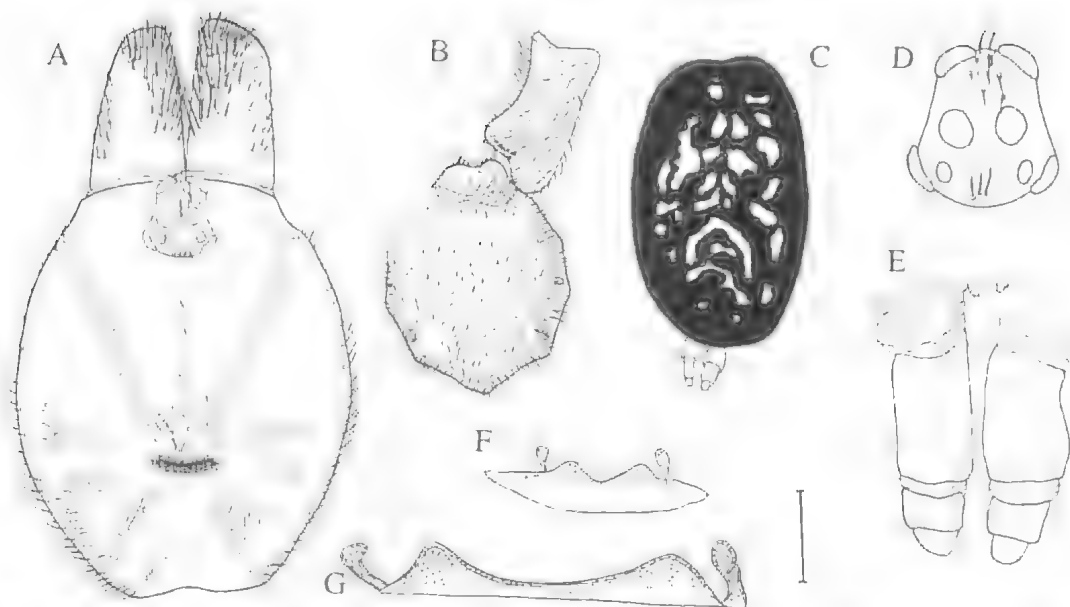


FIG. 143. *Synothele parifusca* (Main). ♀ paratype WAM 82/110, A-F; WAM91/881, G). A, carapace & chelicerae, dorsal view; B, sternum, maxilla & labium, ventral view; C, abdomen, dorsal view; D, eye group, dorsal view; E, spinnerets, ventral view; F, G, spermathecae. Scale line = 1 mm (A, B); 0.5 mm (D-F); 2 mm (C); 0.25 mm (G).

**OTHER MATERIAL EXAMINED.** ♀ New Year Is., Recherche Archipelago, 33°51'S 124°25'E, WA, 6 May 1991, J. Dell, WAM 91/881.

#### DIAGNOSIS

Females differ from those of *S. michaelsoni* in the slightly smaller posterior median spinnerets, the smaller main mound on the spermathecae and in lacking basifemoral thorns.

PMS small. Rastellum absent. Eye group very long, quadrangular. FEMALES. All paired claws dentate; claws on I much smaller than on IV. Basifemoral thorns absent. Femora-patellae III prolaterally without strong setae. Scopula in distal 1/3 of metatarsi III. Preening combs present. Spermathecae two, each a low triangular mound with small outer lateral lobe. MALES. Unknown.

#### DESCRIPTION

(supplementary to Main, 1954)

#### PARATYPE FEMALE WAM 82/110

**Colour.** Carapace, legs and chelicerae orange brown. Abdomen dorsally with large dominant white mottling and brown intervening areas; ventrally yellow brown with slight brown mottling.

**Carapace.** Bristles: 6 long anteromedians; c.6 long between ALE; 1 foveal pair; silver hairs on

margin and on caput; long brown and uniformly spaced on caput and in striae edges; short brown uniformly over caput and interstriae ridges.

**Chelicerae.** Bristles short and dense dorsally. Rastellum consists of dense short group of 30-40 short coniform stout setae in triangular area above fang hinge. Lyra absent. Promargin of furrow with 7 teeth, basomesally with 20 small teeth.

**Maxillae.** 20 cuspules in inner angle; anterior lobe distinct.

**Sternum.** All sigilla small, oval, marginal.

**Legs.** Basifemoral thorns absent. Preening combs: III, 2 close setae on ventrad; IV, 3 stout spine-like setae proventrally.

**Scopula.** Metatarsi: I, in distal one-third, thin and divided; II, a distal divided triangular cluster; III, a distal cluster; IV, two groups of hairs interspersed with bristles. Tarsi: I and II, full but divided by narrow setal band; III and IV, widely divided and thin.

**Spines.** I: fe, p1 d2; pa, 0; ti, v3; me, v1. II: fe, 0; pa, 0; ti, v3; me, v1. III: fe, r1; pa, p1; ti, p2 r2 v4; me, p3 r2 v7. IV: fe, r1; pa, 0; ti, p1 r2 v7; me, p2 r3 v8. Palp: fe, p1 d2; pa, 0; ti, v3.

**Claws.** Very short with 3 tiny teeth (I) to normal length with 3 tiny teeth (IV); palpal claw bare.

**Trichobothria.** c.7 for 3/4 of tibiae; 1 curving row of c.13 on metatarsus; broad band of c.12 filiform.

*Spinnerets*. PMS very small, consisting of two small setose lobes.

*Spermathecae*. Each consisting of a broad low mound with small triangular peak medially, a long slender lobe arises laterally from ventral face and ends in small sphere (taken from WAM 91/881).

#### DISTRIBUTION

Recherche Archipelago, south of WA.

#### REMARKS

The ♀ from New Year Island (WAM 91/881) lacks teeth on the claws of leg I and has only one tooth on the claws of leg IV.

#### *Synothele pectinata* sp. nov.

(Figs 119, 144, Table 9)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Woodline, WLR 9 Gimlet woodland, 31°53'S 122°27'E, WAM Goldfields Survey, pitfall, 31 Mar-2 Apr 1981, WFH et al., WAM 83/401.

#### DIAGNOSIS

Females differ from those of *S. lowri* in the distinct rastellum and many thorn spines on femora III, IV and from *S. goongarie* in stronger rastellum and more distinct thorn spines on femora III; ♀♀ can easily be distinguished from other species of *Synothele* by the normal sized claws on I. Differs from *Oziocrypta littleorum* in lacking basifemoral thorns.

PMS absent. Rastellum a distinct low mound with 8 short curved conical spines. Eye group long, slightly wider behind than in front. FEMALES. Teeth on claws on I, none on claws of IV; claws on I as high as tufts and as high as claws on IV. Basifemoral thorns and preening combs absent. Femora-patellae III prolaterally with 20-30 thorn spines. Scopula in distal 1/3 of metatarsi III. Spermathecae two, each a broad low dome with short inner lobe. MALES. Unknown.

#### ETYMOLOGY

From the latin pecten, a comb, and refers to the comb-like formation of thorn spines on femora III and IV.

#### DESCRIPTION

HOLOTYPE FEMALE WAM 83/401

Carapace 5.00 long, 4.12 wide. Abdomen 6.80 long, 5.40 wide. Total length, 13.

*Colour*. Carapace yellow brown with brown mottling centrally, chelicerae orange brown, legs

yellow not annulated but retrolateral surface of patellae and to lesser extent both lateral faces of tibia light brown. Abdomen dorsally with uniform brown and white mottling of about equal parts, no pattern evident; ventrally, area in front of spinnerets and that anteriorly of posterior booklung margin pallid, rest torn off.

*Carapace*. Pilosity: uniform cover of fine black setae; striae narrow, distinct. Bristles: c.5 erect black beside posterior striae; 10-15 short posteriorly directed anteromedially and many in band beside caput; 8-10 long thick and few fine hairs between PME, and 7 long thick and 2-5 finer between ALE; single line of fine brown setae on lateral margins. Fovea short, procurved.

*Eyes*. Tubercle distinct. Group occupies 0.25 of head-width; front width, back width, length, 24, 35, 33, respectively. Back row recurved. MOQ front width, back width, length, 27, 26, 20, respectively. AME:ALE:PME:PLE, 15:9:5:8. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.6; ALE-PLE, 1.4; PME-PME, 1.1; PME-PLE, 0.1; ALE-ALE, 0.5.

*Chelicerae*. Narrow band of few long and many short bristles prodorsally, laterally almost glabrous. Rastellum a distinct low mound with 8 short curved conical spines in line overhanging fang and triangular area of another 15-20 short spines above that. Furrow promargin with 7 teeth, basomesally with 9 small teeth.

*Labium*, 0.40 long, 0.96 wide. Labiosternal suture a narrow shallow groove.

*Maxillae*, 1.40 long in front, 1.92 long behind, 0.92 wide; with 9 blunt cuspules in inner angle. Heel slightly produced; anterior lobe acutely pointed.

*Sternum*, 2.64 long, 2.28 wide. Sigilla all small, oval, marginal.

*Legs*. Basifemoral thorns and preening combs absent. 20-30 short conical thorn spines distally on prolateral and dorsal edges of femora III, IV; opposing face of patellae with many short curved setae.

	I	II	III	IV	Palp
Femur	3.24	2.84	2.68	3.60	2.40
Patella	2.28	2.00	1.76	2.04	1.52
Tibia	2.40	2.00	1.84	3.16	1.28
Metatarsus	1.68	1.64	2.20	3.44	-
Tarsus	1.04	1.08	1.20	1.48	1.20
Total	10.64	9.56	9.68	13.72	6.40

*Scopula*. Metatarsi: I, II, distal 2/3-1/2 (II), hairs short, thin, entire; III, two sparse triangles in distal 1/3-1/5 (IV). Tarsi: I, II, full, dense, entire, save for few long setae in midline; III, divided by setal band 6-12 wide, band widens

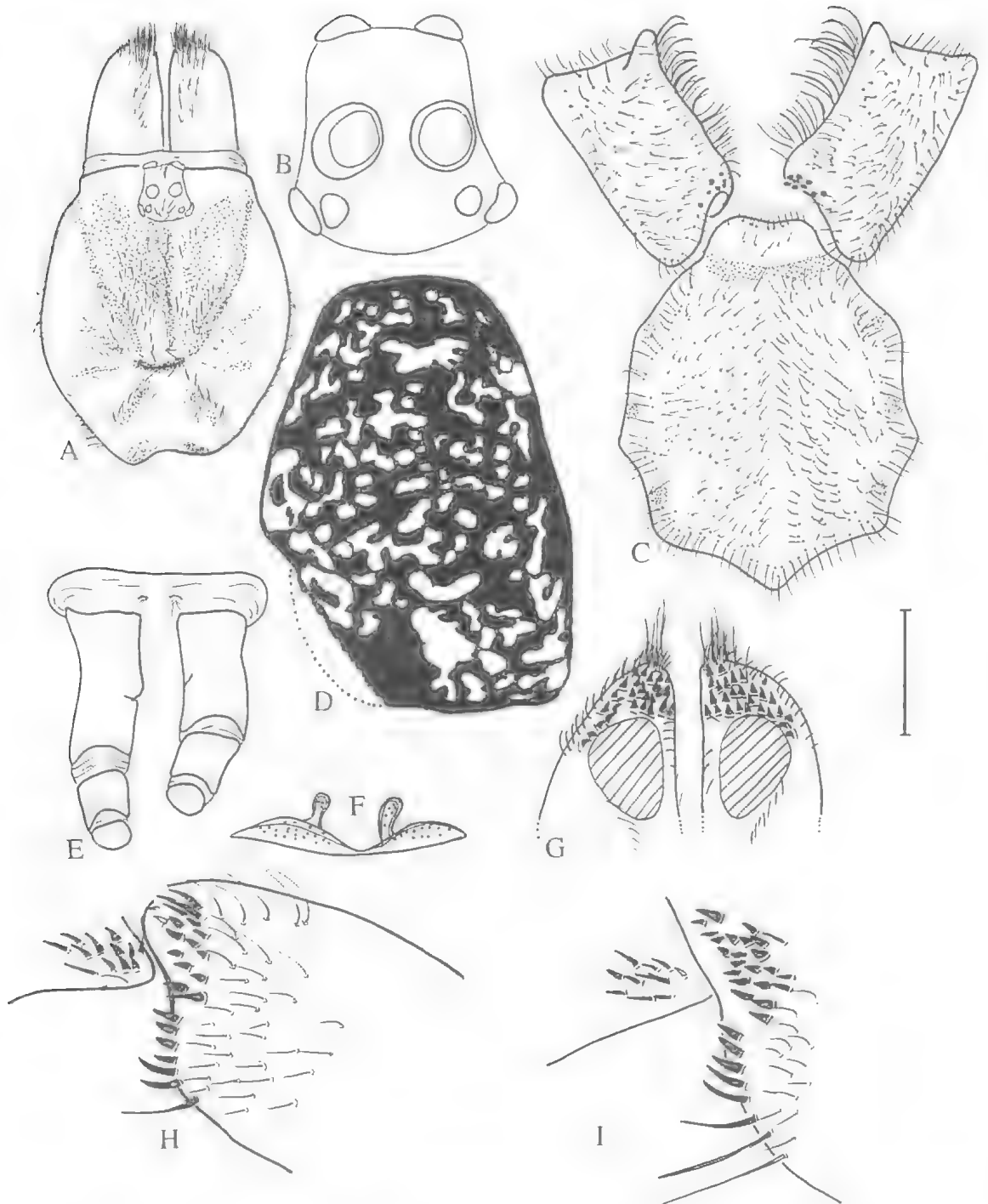


FIG. 144. *Synothele pectinata* sp. nov., holotype ♀ (WAM83/401). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, sternum, maxillae & labium, ventral view; D, abdomen, dorsal view; E, spinnerets, ventral view; F, spermathecae; G, apical chelicerae showing rastellum; H, I, prolateral distal femur & proximal patella III (H), IV (I). Scale line = 1mm (C, E, G); 2mm (A, D); 0.5mm (B, F, H, I).

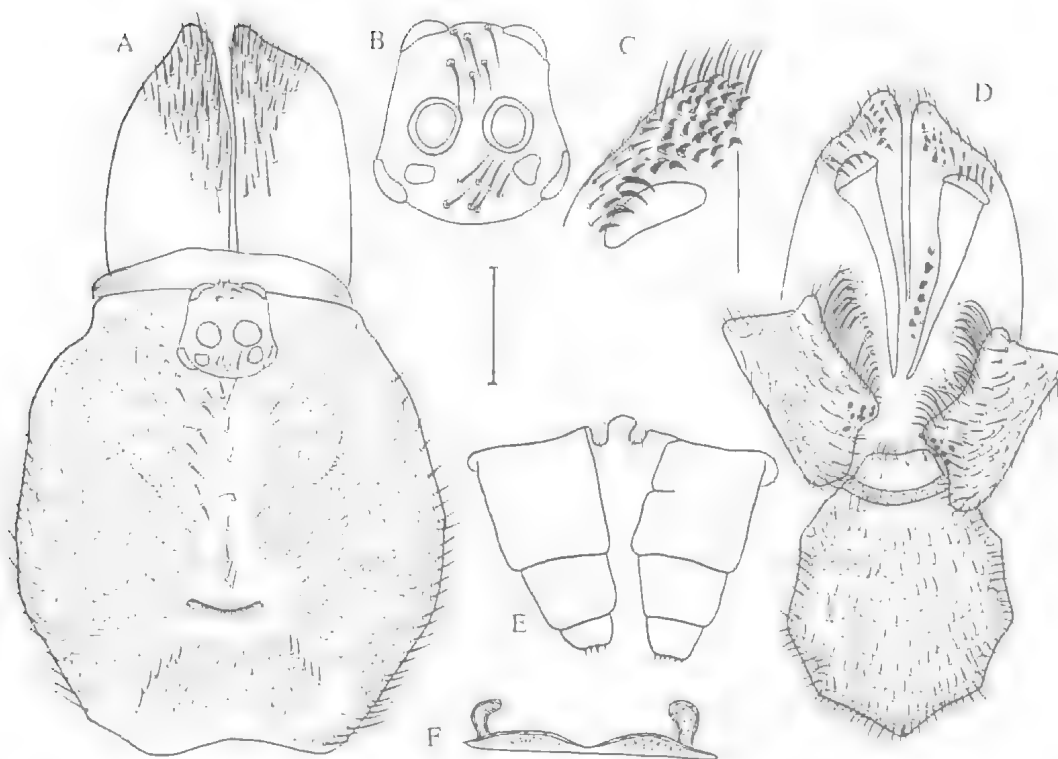


FIG. 145. *Synothele rastelloides* sp. nov., holotype ♀ (WAM 89/313). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, rastellum; D, chelicerae, sternum, maxillae & labium, ventral view; E, spinnerets, ventral view; F, spermathecae. Scale line = 1mm (A, D); 0.5mm (B, C, E); 0.25mm (F).

quickly distally; IV, divided by wide setal band 8-12 wide.

**Spines.** I: fe p1, d4w, pa 0, ti 0, me 0. II: fe p1, d4w, pa 0, ti 0, me 0. III: fe p26 thorns + d1, r2, pa 0, ti r1, v4, me p2, r2, v5. IV: fe d1, r1, pa 0, ti r2, v5, me p2, r2, v6. Palp: fe p1, d3, pa 0, ti 0.

**Claws.** 2 small teeth on long (as high as tufts) (I), claws of IV long, bare; palpal claw half size of tufts, bare.

**Trichobothria.** Two rows, each of c.5 for length of tibiae; c.6 on metatarsi in strongly curving row; c.3 small clavate and c.12 filiform on tarsi.

**Spermathecae.** Two, each a broad low dome with short inner lobe.

**Spinnerets.** PMS absent. Basal, middle, apical, total segments of PLS, 0.88, 0.38, 0.15, 1.41 long, respectively.

#### DISTRIBUTION & HABITAT

Gimlet woodlands at Woodline, in the Western Australian Goldfields.

#### *Synothele rastelloides* sp. nov. (Figs 119, 145, Table 10)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Denmark, 7km W., [34°57'S 115°45'E], WA, Mar 1965, W.H. Butler, WAM 89/313.

#### DIAGNOSIS

Other females in *Synothele* have proportionally smaller rastellum.

PMS minute. Rastellum a large blunt coniform area of 30-40 short curved spines. Eye group long, slightly wider behind than in front. FEMALES. Teeth absent on all claws; claws on leg I about half size of those on IV. Basifemoral thorns and preening combs present. Femoropatellae III prolaterally only with thorn-like setae. No scopula on metatarsi III. Spermathecae two, each a very low dome with higher lateral lobe, distally expanded. MALES. Unknown.

## DESCRIPTION

## HOLOTYPE FEMALE WAM 89/313

Carapace 4.06 long, 3.56 wide. Abdomen 4.69 long, 2.81 wide. Total length 10.

*Colour.* Carapace, chelicerae, and legs orange brown, not annulated. Abdomen damaged and collapsed; presumably dorsally mottled.

*Carapace.* Pilosity: uniform cover of long fine silver hairs and few brown hairs; striae distinct, glabrous, narrow. Bristles: c.4-6 fine, erect, black beside posterior striae; 7 thick anteromedially and few long thick in band beside caput; 6 long thick and few finer between PME, and 6 long thick and 6-8 finer between ALE; few long hairs on lateral margins. Fovea short, procurved; caput distinctly raised.

*Eyes.* Tubercle distinct. Group occupies 0.29 of head-width; front width, back width, length, 40, 54, 48, respectively. Back row recurved. MOQ front width, back width, length, 36, 41, 26, respectively. AME:ALE:PME:PLE, 15:18:9:15. Eye interspaces: AME-AME, 0.5; AME-ALE, 1.0; ALE-PLE, 1.7; PME-PME, 1.5; PME-PLE, 0.1; ALE-ALE, 0.9.

*Chelicerae.* Few long and many short brown bristles prodorsally, laterally almost glabrous. Rastellum a large blunt coniform area, as in *Barychelus*, apically and anteriorly covered with 30-40 short curved spines. Furrow promargin with one small and 6 large teeth, basomesally with 10-15 small teeth.

*Labium.* 0.38 long, 0.78 wide. Labiosternal suture a narrow shallow groove.

*Maxillae.* 1.16 long in front, 1.63 long behind, 0.81 wide; with 11-12 blunt cuspules in inner angle. Heel produced; anterior lobe small, rounded. Lyra absent.

*Sternum.* 2.19 long, 1.97 wide. Sigilla all small, oval, marginal.

*Legs.* 2-3 basifemoral thorns on I, II, and palp. Wide group of thorn setae prolaterally on femora and patellae III, IV. Preening combs: 1 of 3 setae on retroventral III, IV.

	I	II	III	IV	Palp
Femur	2.59	2.44	2.19	3.16	2.09
Patella	1.85	1.66	1.44	1.66	1.47
Tibia	1.66	1.47	1.19	2.13	0.97
Metatarsus	1.22	1.17	1.35	2.41	-
Tarsus	0.94	1.03	0.88	1.09	1.17
Total	8.26	7.77	7.05	10.45	5.70

*Scopula.* Metatarsi: I, II, hairs short, thin, for distal half to third; III, IV, absent. Tarsi: I, II, full, moderately dense, entire, save for few mixed setae; III, IV, widely divided by setal band 8-10 wide.

*Spines.* I: fe p1, d5w, pa 0, ti v2, me v1. II: fe p1, d4w, pa 0, ti v2, me v1. III: fe r1, pa p2, ti p1, r1, v5, me p2, r2, v5. IV: fe r1, pa 0, ti r1, v5, me p1, r1, v8. Palp: fe p1, d5w, pa 0, ti p1, v5.

*Claws.* All claws bare; about half size of tufts (I) to as high as tufts (IV); palpal claw smaller.

*Trichobothria.* Two rows, each of c.10 for length of tibiae; c.15 on metatarsi in curving row; c.4 small clavate and c.8 filiform on tarsi.

*Spermathecae.* Two, each a very low dome with higher lateral lobe, distally expanded.

*Spinnerets.* PMS a pair of minute fleshy lobes each, 0.08 long, 0.05 wide, 0.09 apart, and c.0.11 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 0.58, 0.42, 0.13, 1.13 long, respectively.

## DISTRIBUTION

Near Denmark, SW WA.

*Synothele rubripes* sp. nov.

(Figs 120, 146, Table 10)

## MATERIAL EXAMINED

TYPE. Holotype ♂, 16km S. of Dwellingup, [32°44'S 116°05'E], WA, 28 May 1989, O. Mueller, WAM 89/344.

## DIAGNOSIS

Males differ from those of all other *Synothele* species in well developed posterior median spinnerets and from *Aureococrypta katersi* and *A. lugubris* in that the eye group is only slightly wider behind than in front.

PMS small, well developed. Rastellum low aspinose mound. Eye group long, slightly wider behind than in front. FEMALES. Unknown. MALES. Two rows of teeth on claws of legs I, IV. Tibia I with conical spur and long apical megaspine; prolateral megaspine short, curved, microspur long, digitiform. Bulb with large serrated keels on broad embolus. Intercheliceral tumescence small. Metatarsi and tarsi I, II red orange brown. Scopulate area of metatarsi I, II incrassate.

## ETYMOLOGY

From the latin for 'red legs'; in this case the tarsi alone are reddish.

## DESCRIPTION

## HOLOTYPE MALE WAM 89/344

Carapace 6.06 long, 5.13 wide. Abdomen 4.81 long, 2.81 wide. Total length, 12.

*Colour.* Carapace dark orange brown, chelicerae brown, palp and leg femora yellow

brown, patellae to metatarsi orange brown, metatarsi I, II and all leg tarsi red orange brown, no annulations. Abdomen dorsally brown with irregular white mottling along midline; ventrally pallid save for few brown lines in front of spinnerets, between booklungs, and laterally.

**Carapace.** Pilosity: uniform cover of fine black setae and hair; striae indistinct, narrow. Bristles: c.3 thick erect black beside posterior striae; c.7 thick anteromedially and many shorter beside them; c.8 long bristles and 2-4 finer between PME, and 1 long thick in front of AME, 5 long thick and few finer on clypeal edge; many long brown hairs and long thick bristles on lateral margins. Fovea short, procurved.

**Eyes.** Tubercle distinct. Group occupies 0.31 of head-width; front width, back width, length, 31, 37, 37, respectively. Back row recurved. PLE smaller than PME. MOQ front width, back width, length, 27, 29, 20, respectively. AME:ALE: PME:PLE, 10:11:7:8. Eye interspaces: AME-AME, 0.8; AME-ALE, 1.0; ALE-PLE, 2.2; PME-PME, 1.9; PME-PLE, 0.2; ALE-ALE, 1.1.

**Chelicerae.** Long black bristles and silver hair in broad band prodorsally, laterally a wide band of shorter hair and setae. Rastellum a low mound above fang edge, no spines, but few long thick bristles overhang fang; bristles on mound short, weak. Furrow promargin with 6 small spaced teeth, basomesally with no teeth evident. Intercheliceral tumescence small, distinct, soft, pallid setose; a circular area from posterior edge of chelicera to base of first promarginal tooth.

**Labium.** 0.44 long, 0.96 wide. Labiosternal suture is two sigilla joined medially,

**Maxillae.** 1.60 long in front, 2.08 long behind, 1.00 wide; with 11 small pointed cuspules in inner angle. Heel broad; anterior lobe small, distinct.

**Sternum.** 3.16 long, 2.72 wide. Sigilla: posterior pair in depression; all small, subcircular, marginal.

**Legs.** Tibia I with long sinuous megaspine near tip of conical spur set on distal proventral edge;

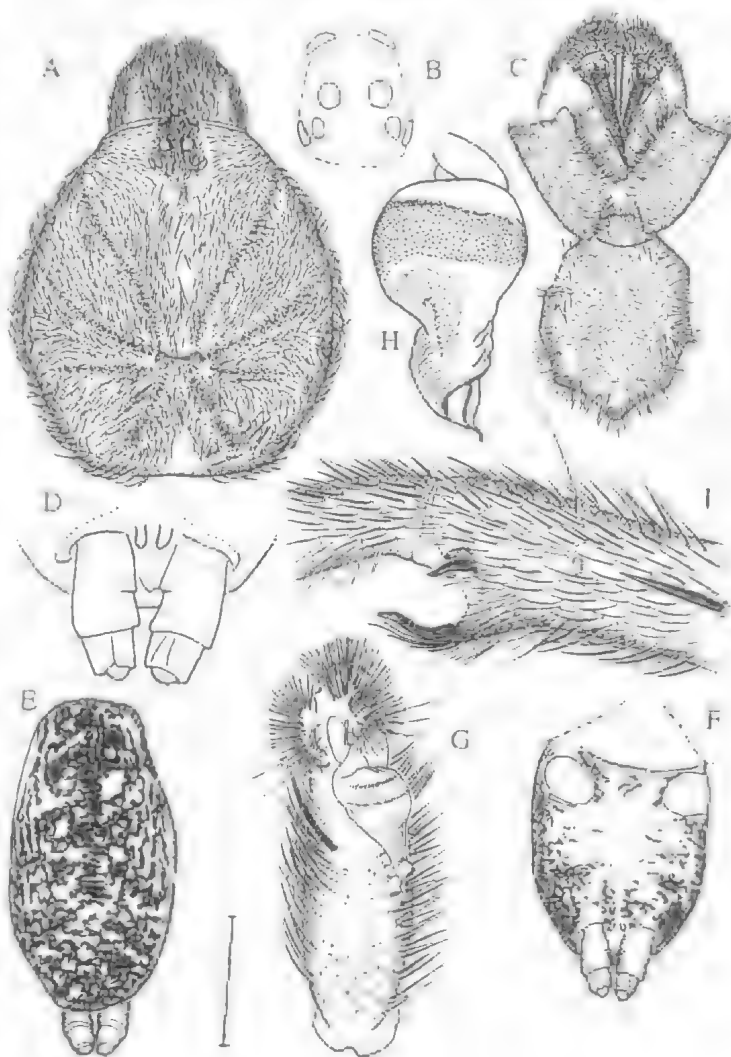


FIG. 146. *Synothele rubripes* sp. nov., holotype ♂ (WAM 89/344). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, chelicerae, sternum, maxillae & labium, ventral view; D, spinnerets, ventral view; E, F, abdomen, dorsal view (E), ventral view (F); G, cymbium & palpal bulb, ventral view; H, palpal bulb, ventral view; I, tibia & metatarsus I, retrolateral view. Scale line = 2mm (A, C, E, F); 1mm (B, D, G, I); 0.5mm (H).



another spine on retrolateral base of spur; prolateral face of tibia with small thumb-like microspur set against and above straight megaspine about twice its length, Metatarsus I short; scopulate area of metatarsi I, II incrassate. Thorn spines absent but cluster of strong setae adjacent to junction of femora and patellae III, IV. Preening combs absent.

	I	II	III	IV	Palp
Femur	4.88	4.56	4.19	5.56	2.81
Patella	2.88	2.75	2.19	2.50	1.81
Tibia	3.69	3.31	2.81	4.38	2.00
Metatarsus	3.19	3.13	3.38	5.25	—
Tarsus	2.00	1.88	1.88	2.19	1.13
Total	16.64	15.63	14.45	19.88	7.75

**Scopula.** All scopulate surfaces pallid. Metatarsi: I, II, long, dense, entire, in distal 2/5; III, IV, few scattered hairs in distal 1/6 or less. Tarsi: I, II, full, hairs short, entire; III, thin, mixed with pallid setae; IV, thin, divided by setal band 6-8 wide.

**Spines.** I: fe p2, d4, r1, pa 0, ti p2 + megaspine, v6 + megaspine, me p1 long, v1 basal. II: fe p1, d4, pa 0, ti p2, v6, me p1 long, v1. III: fe p2, d5, r3, pa p2, v1, ti p3, r3, v8, me p3, r5, v10. IV: fe d3, r2, pa 0, ti p2, r3, v10, me p6, r5, v11. Palp: fe p1, d5, pa 0, ti p2, v3.

**Claws.** Two rows, outer row slightly flared out of 6 long teeth, inner row of 4 teeth set high on claw and becoming higher toward base of claw and strongly flared away from claw; legs I, IV similar in size and dentition.

**Trichobothria.** Two rows, each of c.11 for length of tibiae; c.15 on metatarsi in curving row; c.3 small thin clavate and c.12 filiform on tarsi.

**Palp.** Bulb conical with widely keeled embolus, one keel irregularly serrated; embolus tip short slender; retrolateral face of cymbium concave.

**Spinnerets.** PMS small but evident. PMS 0.13 long, 0.05 wide, 0.13 apart, and c.0.10 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 0.78, 0.38, 0.13, 1.29 long, respectively.

#### DISTRIBUTION

Near Dwellingup, SW WA

*Synothele subquadrata* sp. nov.  
(Figs 119, 147, Table 9)

#### MATERIAL EXAMINED

**TYPE.** Holotype ♂, SW Osborne Is., 13.5k NE Crystal Head, WA, site 11/1 (BYM no. 1988/K715), 14°23'S 125°57'E, WA, 8 Jun 1988, J. Majer, WAM 92/288.

#### DIAGNOSIS

Differs from *Aureocrypta katersi* in lacking posterior median spinnerets and from *Ozicrypta tuckeri*, which it resembles in the ascopulate tarsi, in lacking teeth on claws of ♂♂.

PMS absent. 12 cuspules on maxillae. Rastellum absent. Preening combs on pro- and retroventral metatarsi II, IV. Scopula absent. **MALES.** Tibia I with low distal ventral spur with stout almost straight megaspine, microspur small, slender, digitiform and set against slightly sinuous long upper megaspine. Bulb long, pyriform with short spiralled embolus arising in distal 1/4 with 3 small keels, highest arising above embolus on enlargement of bulb. Claws all bare and as high as tufts. **FEMALES.** Unknown.

#### ETYMOLOGY

From the subquadrate cyc group.

#### DESCRIPTION

**HOLOTYPE MALE** WAM 92/288

Carapace 2.51 long, 2.10 wide. Abdomen 2.51 long, 1.49 wide. Total length 6.

**Colour.** Carapace, chelicerae, and legs yellow brown, not annulated. Abdomen dorsally blue black with five vermiform pallid lines reducing intensity to light brown; ventrally pallid anteriorly and medially, laterally and posteriorly like dorsum.

**Carapace.** Pilosity: lightly hirsute with few long wavy hairs in clusters marginally on interstrial ridges, mixed with light cover of brown bristles; striae all save anterior indistinct. Bristles: 2-4 long erect black beside posterior striae; c.8 (broken) anteromedially and c.20-30 in band beside caput; 2-3 long thick and few finer between PME, and 3-4 long thick and few finer between ALE; long brown bristles in single line on lateral margins, all project forward. Fovea short, straight.

**Eyes.** Tubercle distinct. Group occupies 0.35 of head-width; front width, back width, length, 25, 27, 23, respectively. Right PLE missing, right PME (judged by colour and shape) enlarged to fill space of both. MOQ front width, back width, length, 16, 20, 14, respectively. AME:ALE: PME:PLE, 8:11:6:8. Eye interspaces: AME-AME, 0.1; AME-ALE, 0.1; ALE-PLE, 0.6; PME-PME, 0.9; PME-PLE, 0; ALE-ALE, 0.5.

**Chelicerae.** Broad band of short fine brown setae prodorsally, laterally with narrow setal band. Rastellum absent. Intercheliceral tumescence absent. Furrow promargin with 10 small close teeth, basomesally with no teeth evident.

**Labium.** 0.16 long, 0.39 wide; distinct glabrous band centrally; band of fine setae on anterior margin, 2 long thick setae on anterior right (from below), line of fine setae along posterior margin. Labiosternal suture a wide groove of two tear-shaped sigilla.

**Maxillae.** 0.68 long in front, 0.84 long behind, 0.37 wide; with 12 cuspules in inner angle. Heel rounded; anterior lobe small; lyrar setae absent.

**Sternum.** 1.29 long, 1.00 wide; anterior 1/5th of sternum (20-30), maxillary heel (8-10) and labium (2) with setae with truncate apices and distinctly thicker than elsewhere on sternum. Sigilla small, round, marginal.

	I	II	III	IV	Palp
Femur	0.98	0.84	0.81	1.13	0.60
Patella	0.63	0.63	0.50	0.56	0.37
Tibia	0.74	0.56	0.58	1.06	0.42
Metatarsus	0.60	0.55	0.68	1.15	-
Tarsus	0.39	0.37	0.40	0.55	0.29
Total	3.34	2.95	2.97	4.45	1.68

**Legs:** Tibia I with low distal ventral spur with stout almost straight megaspine, microspur small, slender, digitiform and set against slightly sinuous long upper megaspine. Thorn spines absent. Preening combs: 1 distinct of 2-3 setae on pro- and retroventral III, IV.

**Scopula.** Entirely absent.

**Spines.** I: fe p1, d3w, pa 0, ti p2 + megaspine, v4 + megaspine, me p1, v1. II: fe p1, d2w, pa 0, ti p2, v3, me p2, v1. III: fe p2, d3, r3, pa p2, ti p2, r2, v8, me p2, r2, v7. IV: fe d3, r2, pa v1, ti p2, r3, v11, me p3, r3, v6. Palp: fe 0, pa 0, ti p1.

**Claws.** All claws higher than tufts and

bare; tufts well developed, higher than diameter of tarsi; apical tuft on cymbium.

**Trichobothria.** Two rows, each of c.8 for length of tibiae; c.6 on metatarsi in diagonal row; c.3 large clavate (basally) and c.7 filiform on tarsi; 2 small clavates basally on cymbium.

**Palp.** Bulb long, pyriform with short spiralled embolus arising in distal 1/4 with 3 small keels, highest arising above embolus on enlargement of bulb; cymbium bipartite, lobes unequal; retrolateral face of cymbium slightly concave.

**Spinnerets.** PMS entirely absent. Basal, middle, apical, total segments of PLS, 0.26, 0.13, 0.15, 0.54 long, respectively.

#### DISTRIBUTION & HABITAT

Rainforest on SW Osborne Is., 13.5km NE Crystal Head, northwestern WA.

#### REMARKS

The lack of posterior median spinnerets clears any question about the possible conspecificity of

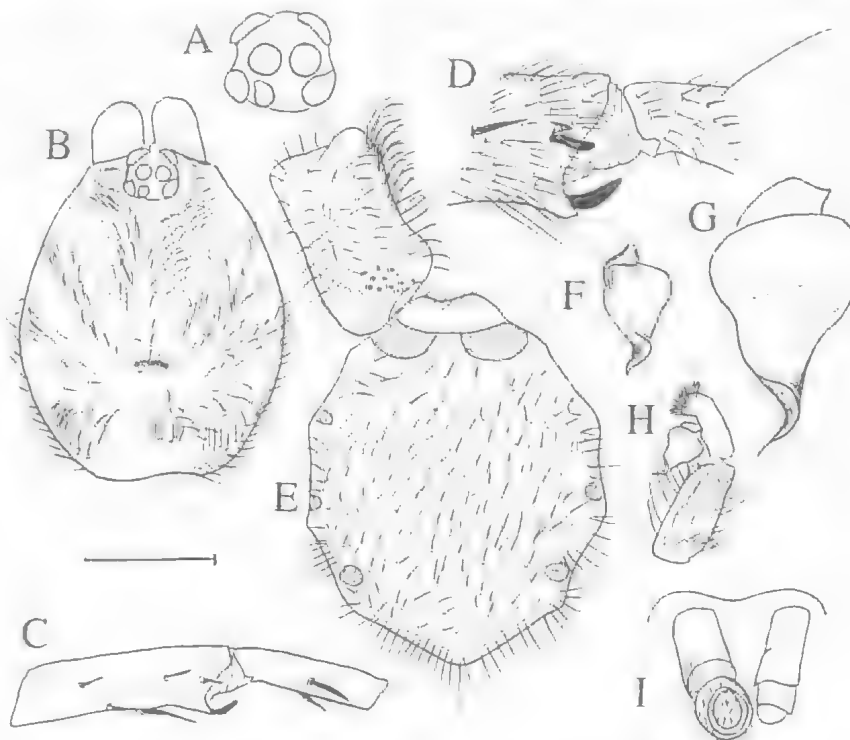


FIG. 147. *Synothele subquadrata* sp. nov., holotype ♂ (WAM 92/288). A, eyes, dorsal view; B, carapace & chelicerae, dorsal view; C, D, tibia & metatarsus I, prolateral view; E, sternum, maxilla & labium, ventral view; F, G, palpal bulb retrolateral (F), ventral (G); H, palpal tibia, cymbium & bulb, retrolateral view; I, spinnerets, ventral view. Scale line = 1mm (B, C, H); 0.5mm (A, D-F, I); 0.25mm (G).

*S. subquadratus* and *Aureocrypta katersi* which are from geographically close localities.

This species was listed tentatively as *Idiactis* sp. by Main (1991, p. 276) to which it bears only a broad similarity. It is placed in *Synothele* because ♂♂ lack teeth on the claws and no other characters place it in any other genera.

***Synothele taurus* sp. nov.**  
(Figs 120, 148, Table 10)

**MATERIAL EXAMINED**

TYPE. Holotype ♀, 19km N of Bullsbrook, 31°30'S 116°00'E, WA, 1966-1974, GL, WAM 90/2010.

**DIAGNOSIS**

Females differ from those of *S. rastelloides* in having PMS and from *S. michaelsoni*, *S. parifusca*, *S. mullaloo* and *S. rubripes* in having a raised mounded rastellum.

PMS small, distinct. Rastellum a distinct rounded process with many short strong curved spine-like bristles. FEMALES. Claws on leg I, c.2/3 size of leg IV claws and tufts. Basifemoral thorns and preening combs absent. Spermathecae two, each a broad raised domed with very short lateral lobe. MALES, Unknown.

**ETYMOLOGY**

From the Latin *taurus*, bull, part of the name of the type locality, with thanks to Dr Mark Harvey for the suggestion.

**DESCRIPTION**

**HOLOTYPE FEMALE WAM 90/2010**

Carapace 7.00 long, 5.94 wide. Abdomen 6.75 long, 5.31 wide. Total length, 16.

**Colour.** Carapace, chelicerae, and legs orange brown, not annulated. Abdomen dorsally brown with many moderately large irregular white spots, in posterior half forming 3 pairs of diagonal lines; ventrally pallid with brown intrusive areas laterally forming narrow triangles on each side medially, few brown flecks near spinnerets, medially and two brown crescentic areas on inner edges of posterior book lung covers.

**Carapace.** Pilosity: uniform cover of short fine brown hairs and longer bristles; striae indistinct, narrow. Bristles: 5-7 erect black beside posterior striae; 10 anteromedially and 10-15 in band beside caput; 6 long thick and few finer between PME, and 5 long thick and 8-10 finer between ALE; few short hairs on lateral margins, not directed out but up. Fovea broad, procurved. Dis-

tinct cuticular shelf evident behind posterior corners of carapace and laterally.

**Eyes.** Tubercle low, distinct. Group occupies 0.22 of head-width; front width, back width, length, 37, 55, 43, respectively. Back row straight. MOQ front width, back width, length, 32, 37, 21, respectively. AME:ALE:PME:PLE, 11:14:7:15. Eye interspaces: AME-AME, 0.9; AME-ALE, 1.0; ALE-PLE, 1.6; PME-PME, 2.3; PME-PLE, 0.2; ALE-ALE, 1.3.

**Chelicerae.** Distinct band of many long and short brown bristles prodorsally, laterally a narrow band of short setae. Rastellum a distinct rounded process with many short, strong, curved, spine-like bristles. Furrow promargin with 7 small widely spaced teeth, basomesally with 10 small teeth.

**Labium.** 0.52 long, 1.32 wide; short, band of c.20 fine bristles along posterior edge, 10 medially, and 30-40 anteriorly. Labiosternal suture a narrow groove, separate sigilla not evident.

**Maxillae.** 2.00 long in front, 2.60 long behind, 1.28 wide; with 14-17 blunt cuspules clustered in inner angle. Heel angular, slightly produced; anterior lobe acute, short, distinct.

**Sternum.** 3.72 long, 3.12 wide; narrow; margins hirsute. Sigilla all oval, marginal, posterior pair larger.

**Legs.** Basifemoral thorns and preening combs absent. 3-4 thorn spines on patellae III.

**Scopula.** Metatarsi: I, II, full, dense, entire; III, in distal 1/3, divided by setal band; IV, in distal 1/4, divided. Tarsi: I, II, full, dense, entire; III, dense, divided by narrow setal band 6-8 wide; IV, less dense, divided by wider setal band 6-10 wide.

	I	II	III	IV	Palp
Femur	3.94	3.88	3.81	5.31	3.38
Patella	2.56	2.69	2.38	2.88	2.25
Tibia	2.31	2.50	2.25	3.56	1.88
Metatarsus	1.88	1.94	2.25	3.94	-
Tarsus	1.38	1.25	1.19	1.31	1.75
Total	12.07	12.26	11.88	17.00	9.26

**Splines.** I: fe p3, d4w, pa 0, ti v4, me 0. II: fe p1, d3w, pa p2, ti v4, me v1 basal. III: fe p3, d6w, r3, pa p3, r1, ti p2, r2, v8, me p2, r2, v5. IV: fe d4w, r1, pa r1w, ti p2, r3, v7, me p2, r3, v9. Palp: fe p1, d3w, pa v1w, ti p4, v6.

**Claws.** 1 long and 1 minute tooth (I) to none (IV, palp); on leg I, c.2/3 size of leg IV claws and tufts; palpal claw smaller, c.1/3 size of claws of leg IV.

**Trichobothria.** Two rows, each of c.8 for length of tibiae; c.11 on metatarsi in short strongly curved row for distal 2/3 and forming triangular cluster distally; c.4 small clavate basally, c.5 filiform in each of 3 bands on tarsi.

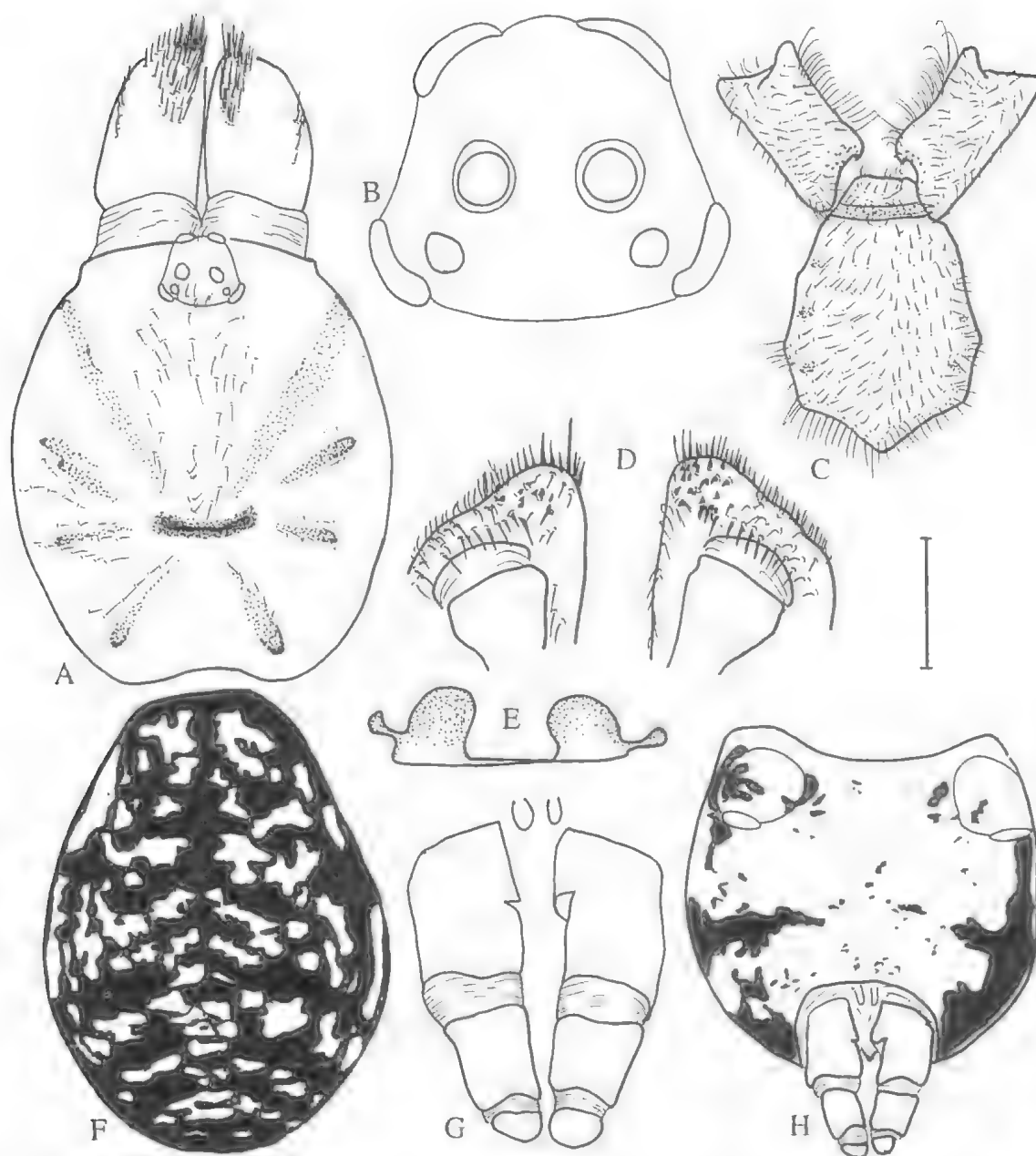


FIG. 148. *Synothele taurus* sp. nov., holotype ♀ (WAM 90/2010). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, sternum, maxillae & labium, ventral view; D, apical chelicerae with rastellum, ventral view; E, spermathecae; F, H, abdomen, dorsal (F), ventral view (H); G, spinnerets, ventral view. Scale line = 2mm (A, C, F, H); 1mm (D, G); 0.5mm (B, E).

**Spermathecae.** Two, each a broad raised domed with very short lateral lobe.

**Spinnerets.** PMS very small but distinct, 0.17 long, 0.10 wide, 0.13 apart, and c.0.13 of basal PLS in diameter. Basal, middle, apical, total seg-

ments of PLS, 1.13, 0.55, 0.28, 1.96 long, respectively.

#### DISTRIBUTION

19km north of Bullsbrook, southwestern WA.

## SYMPATRIC MYGALOMORPHS

Barychelidae: *Synothele lowei*; *Aureocrypta lugubris*.

*Synothele yundamindra* sp. nov.

(Figs 119, 149, Table 9)

## MATERIAL EXAMINED

TYPES. Yundamindra, WAM Goldfields Survey, WA. Holotype ♂, 29°24'S, 122°28'E, site YMR 3, Mallee, Mulga/Triodia, 23-29 Jul 1981, WFH et al., WAM 83/248. Paratypes: 2 ♂♂, same data as holotype, WAM 83/249-50; ♂, site YMR1, 29°15'S 122°24'E, Mulga/Lignum, Oct 1980, pitfall, WFH et al., WAM 83/302.

## DIAGNOSIS

Males differ from those of *S. lowei* in that the distal portion of the bulb is broad for most of its length.

PMS absent save for two small clusters of setae on mounds. Rastellum absent. Eye group short, slightly wider behind than in front. FEMALES. Unknown. MALES. All claws bare. Tibia I with low conical spur and long apical megaspine; prolateral megaspine and microspur absent. Bulb with broad distal portion and many fine longitudinal grooves, one long keel arises on tegulum and spirals quickly in distal quarter to short hooked, spine-like embolus. Intercheliceral tumescence small, indistinct. Tarsi I, II medially incrassate; scopulate surfaces pallid.

## ETYMOLOGY

From the native name of the type locality.

## DESCRIPTION

## HOLOTYPE MALE WAM 83/248

Carapace 4.50 long, 3.50 wide. Abdomen 4.50 long, 2.88 wide. Total length, 10.

*Colour.* Carapace, chelicerae, and legs yellow brown not annulated. Abdomen dorsally brown with slightly less than half surface with moderately large pallid mottling forming no distinct pattern; ventrally entirely pallid.

*Carapace.* Pilosity: uniform cover of long fine wavy brown hairs and fine black bristles; only anterior striae distinct, narrow, other with line of bristles along margins. Bristles: 3-4 pairs of erect black on both edges of each posterior striae; 12 anteromedially, 11 of which posteriorly directed, and many in wide band beside caput; c.5 long thick and 4-6 finer between PME, and c.5 long thick and few finer between ALE; band of long light brown hairs and long curved black bristles on lateral margins. Fovea short, procurved.

*Eyes.* Tubercle distinct. Group occupies 0.34 of head-width; front width, back width, length, 45, 59, 49, respectively. Back row slightly recurved. MOQ front width, back width, length, 40, 38, 29, respectively. AME:ALE:PME:PLE, 16:17:16:18. Eye interspaces: AME-AME, 0.6; AME-ALE, 0.4; ALE-PLE, 1.4; PME-PME, 1.6; PME-PLE, 0.1; ALE-ALE, 1.0.

*Chelicerae.* Wide band of long brown bristles and long fine hairs prodorsally, laterally a wide band of short bristles. Rastellum absent. Furrow promargin with 6 small widely spaced teeth, basomesally bare. Intercheliceral tumescence small, indistinct, save for small cluster of inwardly directed bristles.

*Labium.* 0.34 long, 0.63 wide. Labiosternal suture small narrow shallow groove including two small separate sigilla.

*Maxillae.* 1.25 long in front, 1.56 long behind, 0.63 wide; with 6 small pointed cuspules in inner angle. Heel indistinct; anterior lobe small.

*Sternum.* 2.41 long, 1.88 wide. Sigilla all small, oval, marginal.

*Legs.* Tibia I with low conical spur distoventrally, apically with long bent megaspine and cluster of long curved bristles arise beside its base; upper megaspine and microspur absent. Thorn spines and preening combs absent. Tarsi I, II medially incrassate.

	I	II	III	IV	Palp
Femur	3.75	3.56	3.56	4.75	2.00
Patella	2.06	1.94	1.63	2.00	1.19
Tibia	2.88	2.63	2.63	4.06	1.25
Metatarsus	2.69	2.63	3.13	4.69	-
Tarsus	2.00	1.94	1.94	2.38	0.81
Total	13.38	12.70	12.89	17.88	5.25

*Scopula.* Scopulate surfaces pallid. Metatarsi: I, II, thin, weak, in distal 1/4-1/3; III, small cluster of 15-20 hairs; IV, absent. Tarsi: I-III, full, thin, hairs short, entire; IV, widely divided by setal band 8-10 wide.

*Spines.* I: fe p1, d4, pa 0, ti p2, v2 + megaspine, me p1. II: fe p1, d4, pa 0, ti p2, v4, me p1. III: fe p2, d3, r2, pa p1, ti r2, v8, me p2, r4, v6. IV: fe d5, r2, pa 0, ti p1, r4, v10, me p3, r3, v8. Palp: fe d3, pa 0, ti p2, v1.

*Claws.* Slightly smaller than tufts; all bare.

*Trichobothria.* Two rows, each of c.8 for 3/4 of tibiae; c.18 on metatarsi in slightly curving row; c.16 filiform on tarsi, no clavates.

*Palp.* Bulb pyriform with broad distal portion with many fine longitudinal grooves, one long keel arises on tegulum and spirals quickly in distal quarter to short hooked, spine-like embolus; retrolateral face of cymbium concave.

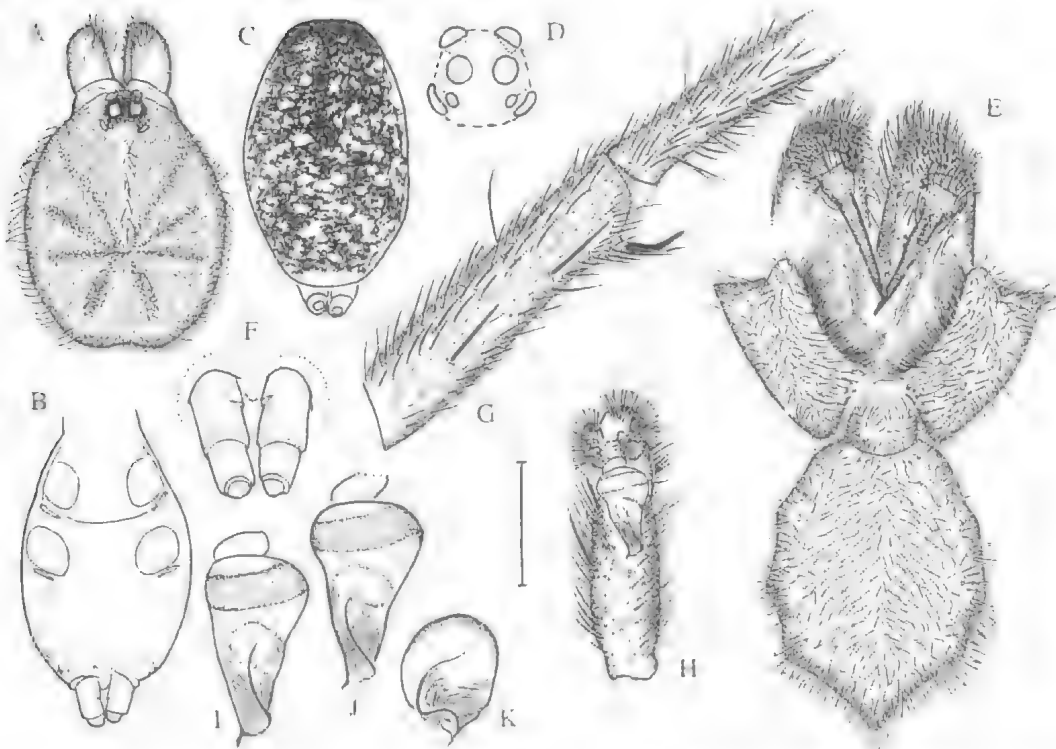


FIG. 149. *Synothele yundamindra* sp. nov., holotype ♂ (WAM 83/248). A, carapace & chelicerae, dorsal view; B, C, abdomen, ventral view (B), dorsal view (C); D, eye group, dorsal view; E, chelicerae, sternum, maxillae & labium, ventral view; F, spinnerets, ventral view; G, tibia & metatarsus I, prolateral view; H, cymbium & palpal bulb, ventral view; I-K, palpal bulb, ventral (I), retrolateral (J), posterior views (K). Scale line = 2mm (A-C); 1mm (D-H); 0.5mm (I-K).

**Spinnerets.** PMS absent, save for two small clusters of setae on mounds, 0.05 long, 0.02 wide, 0.13 apart, and c.0.04 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 0.75, 0.23, 0.06, 1.04 long, respectively.

#### DISTRIBUTION & HABITAT

*Yundamindra*, in Mallee and woodland dominated by *Mulga/Triodia* or *Mulga/Lignum*.

***Trittame* Koch, 1873**

*Trittame* Koch, 1873, p. 454, table 37, fig. 5; Koch, 1874, p. 482; Ausserer, 1875, p. 136, 165; Simon, 1892, p. 119, 124; Hogg, 1902, p. 241; Simon, 1903, p. 911; Rainbow, 1911, p. 115; Roewer, 1942, p. 217; Bonnet, 1959, p. 4697; Brignoli, 1983, p. 129; Main, 1985, p. 14; Raven, 1985b, p. 114; Platnick, 1989, p. 92; Raven, 1990, p. 22; Platnick, 1993, p. 99.

#### TYPE SPECIES

*Trittame gracilis* Koch, 1874, by monotypy.

#### DIAGNOSIS

Differs from all other Australian barychelids and *Orstom*, except *Zophorame*, in the combination of densely packed (100 or more) cuspsules on the squared heeled maxillae, large posterior median spinnerets and no abdominal pattern. Males are further distinguished in lacking teeth on any claws. Differs from *Zophorame* in lacking labial cuspsules, teeth on the ♀ palpal claw and a strongly produced rastellum.

#### DESCRIPTION

Carapace broad, hirsute. Fovea procurved. Eyes on tubercle, in 3 rows in subquadrate group; clypeus absent. Lyra absent. Maxillae with 60 or more cuspsules in broad triangular area or curving around inner edge of maxillae; cuspsules densely packed; heel broad, squared;

	<i>augustevni</i>	<i>herniesmythi</i>	<i>forsteri</i>	<i>gracilis</i>	<i>ingrami</i>	<i>kacfu</i>	<i>loki</i>	<i>micelli</i>	<i>rainbowi</i>	<i>stomieri</i>	<i>xerophila</i>
Size of PMS	distinct	distinct	small	distinct	small	small	small	large	large	distinct	large
No. maxillary cuspules	50-60	c. 120	100	100+	100+	100	100	150+	200-300	100+	100+
Dorsal abdomen, pattern	black	dark	mottled	mottled	mottled	black	black	black	black	black	black
♂ Tibial spur position	inset	subdistal	post-distal	distal	subdistal	absent	absent	distal	distal	distal	?
Tibial mesepisteme	long	stout	stout	long, curved	long curved	absent	absent	short curved	long curved	long curved	?
Spur size	low	strong	strong	raised	raised cone	absent	absent	conical	low mound	low cone	?
Upper mesepisteme	absent	long curved	lower	long, curved	long low	absent	absent	long	absent	strong	?
Tibial microspur	absent	minute	short	absent	absent	absent	absent	absent	absent	triangular	?
Palpal bulb	simple	simple	simple	simple	simple	simple	simple	simple	simple	simple	?
Keels on bulb	fine	>absent	>absent	absent	absent	absent	absent	absent	2 fine	2 + 3 fine	?
Embolus origin	gradual	gradual	gradual	gradual	gradual	sudden	>>gradual	sudden	gradual	gradual	?
Interchehal tumescence	absent	absent	absent	absent	absent	pallid area	absent	absent	small pallid	small setose	?
♀ Spermathecal lobes	?	?	2 + 2	2 + 2	2 + 2	1 + 1	1 + 1	?	1 + 1	?	2 + 2
Spermathecae shape	?	?	simple lobes	simple lobes	simple lobes	simple lobes	Y-shaped	?	simple lobes	?	simple lobes
Rastellum	absent	absent	absent	spinose mound	absent	spinose mound	absent	absent	low mound	absent	spinose
Pateal thorns III(IV)	absent	present	absent	strong	absent	absent	absent	absent	absent	absent	present
Basifemoral thorns	?	?	absent	absent	absent	absent	absent	absent	I, II, IV	absent	absent
Scopula metatarsi III(IV)	?	1/2(1/2)	weak	1/2	1/2(1/4)	absent	absent	1/2(1/4)	1/2	1/2	1/3
Preening combs III(IV)	present	pro & retro	present	present	present	present	absent	pro & retro	absent	absent	weak
Autopomorphy	s-pur										
Habitat	vine thicket	brigalow	rainforest	open forest	vine thicket	rainforest	rainforest	woodland	rainforest	woodland	vine thicket
Burrow type	?	?		open tube & side flask	?	sinuous tube	tube & side shaft	?	tube & side shaft	?	tube & side shaft
Burrow door	?	?			?	plug hinged below	on side flask	?	on side flask	?	on side flask
Distribution	Eina Caves, MEQ	Glennmorgan, SCQ	Eungella & Round Hill Head, MEQ	Rockhampton-Prosperpine, MEQ		Cape Tribulation, NEQ	NE coastal, Q	Biloela, SEQ	Mt Cleveland, NEQ	Roadsboro, MEQ	MEQ

Table 11. *Tritame* species.



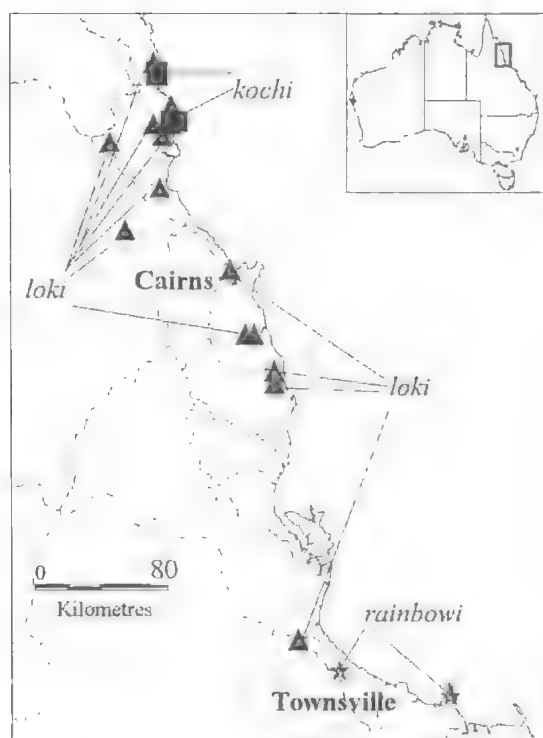


FIG. 150. Records of *Trittame* in far northern Queensland with catchment boundaries.

anterior lobes rounded. Cuspule microstructure: c.20-40µm in maximum diameter; intercrest distance 0.4-1.25µm apart; profile bilaterally uniform balloon; ridge direction, continuous over smooth crest, like thumbprints; cuspule interspace, about 1 diameter. Chelicerae with rastellum sometimes on mound; intercheliceral tumescence small, pallid (*T. kochi*, *T. rainbowi*, *T. stonieri* or absent). Labium wider than long, cuspules absent. Sternum cordate with three pairs of small, oval sigilla; posterior sigilla larger than others. Scopula: ♂♂, thin and entire or narrowly divided on tarsi I, II; thin and sometimes widely divided by setae or absent on tarsi III, IV; thin and in distal 1/2-2/3 on metatarsi I, II; almost absent on metatarsi III, IV. ♀♀, divided on all tarsi, dividing setal band wider on tarsus IV than on I, absent on metatarsus IV. Claws of ♂♂ always bare, and of ♀♀ with one row of few, small teeth or bare; all teeth resemble lamellae. All paired claws of ♀♀ small, just lower than tufts. Palpal claw small, bare. Claw tufts small, little more in diameter than that of

distal tarsi. Leg spines with longitudinal ridges with fishbone ridges along sides. Tarsal organ difficult to see; low. Trichobothria with corrugiform bases; bothria feathery in microstructure. Leg cuticle smooth. Hairs of claw tufts finely fimbriated. Preening combs present or absent. Tibia I of ♂♂ with low, distal ventral spur and megaspine prolaterally or spur absent, microspur and associated megaspine present or absent. Palpal bulb pyriform with tapering embolus, sometimes keeled. Spermathecae with two entire or one divided or un-

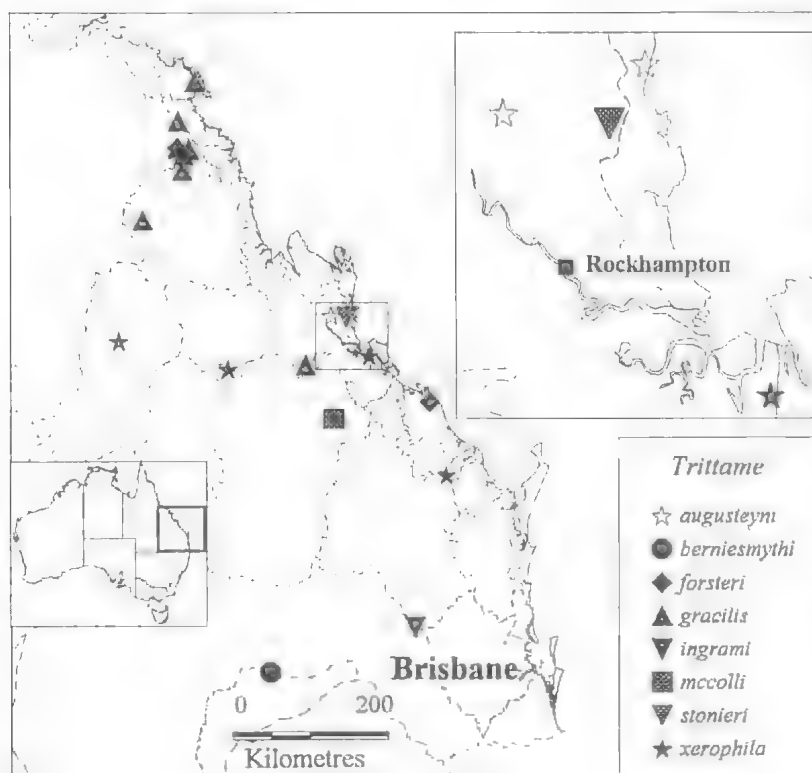


FIG. 151. Records of *Trittame* in central to southern Queensland with catchment boundaries.

divided receptaculum on each side.

#### INCLUDED SPECIES

*Trittame augusteyni* sp. nov.  
*Trittame berniesmythi* sp. nov.  
*Trittame forsteri* Raven, 1990  
*Trittame gracilis* Koch, 1874  
*Trittame ingrami* Raven, 1990  
*Trittame kochi* Raven, 1990  
*Trittame loki* Raven, 1990  
*Trittame mccolli* sp. nov.  
*Trittame rainbowi* sp. nov.  
*Trittame stonieri* sp. nov.  
*Trittame xerophila* Raven, 1990

#### DISTRIBUTION & HABITAT

*Trittame* occurs from Cape Tribulation, Mt Finlay, Cairns, Innisfail, Townsville, Homevale, Rundle Range, Mt Etna region, Blackdown Tableland, through to Marlaybrook, near the Bunya Mts in SEQ. Most species are found in semi-evergreen vine thickets and open eucalypt forests, with *T. forsteri*, *T. kochi*, *T. loki*, and *T. rainbowi* found in rainforest.

#### REMARKS

Raven (1990) placed *Trittame thorelli* as the sister group of all other species of *Trittame* based on its claw dentition. Consistent with that, it is here transferred to *Mandjelia* where its claw dentition, and maxillary cuspule distribution and type are typical of the genus.

#### KEY TO SPECIES OF TRITTAME

##### FEMALES

1. Thorn spines present on femora or patellae III and IV . . . . . *T. gracilis*  
 Thorn spines absent on femora and patellae III and IV . . . . . 2
- 2(1). Rastellum strong . . . . . *T. kochi*  
 Rastellum weak or absent . . . . . 3
- 3(2). Preening combs on metatarsi III and IV . . . 4  
 Preening combs absent . . . . . *T. loki*
- 4(3). Carapace uniformly covered with golden brown hairs . . . . . *T. xerophila*  
 Carapace glabrous or nearly so . . . . . 5
- 5(4). Distance between backs of ALE and front of AME greater than 10% of eye group length; outer lobes of spermathecae shorter (Fig. 92) . . . . . *T. ingrami*  
 Distance between backs of ALE and front of AME much less than 10% of eye group length; outer lobes of spermathecae longer (Fig. 89) . . . . . *T. forsteri*

##### MALES

1. Tibial spur absent . . . . . 2  
 Tibial spur present . . . . . 3
- 2(1). Large brown spiders; legs of one colour; preening combs absent . . . . . *T. loki*  
 Small black spiders; legs basally black, distally red brown; with preening combs . . . . . *T. kochi*
- 3(1). Distinct rastellum and thorn spines on femora and patellae . . . . . *T. gracilis*  
 No rastellum or thorn spines . . . . . 4
- 4(3). No upper megaspine (Fig. 152G) . . . . .  
 . . . . . *T. augusteyni*  
 With upper megaspine but may be very small (Fig. 154B) . . . . . 5
- 5(4). Bulb tapers abruptly to embolus (Fig. 156G) . 6  
 Bulb tapers gradually to embolus (Fig. 157K) . . . . . 7
- 6(5). Tibial spur set well back from distal corner (Fig. 154B) . . . . . *T. ingrami*  
 Tibial spur set on distal corner (Fig. 156E) . . . . . *T. mccolli*
- 7(5). Microspur distinct (Fig. 159G) . . . . . *T. stonieri*  
 Microspur minute if evident (Fig. 157G) . . . 8
- 8(7). Embolus with short but distinct keel (Fig. 157K) . . . . . *T. rainbowi*  
 Embolus without keels or keels very fine (Fig. 153E) . . . . . 9
- 9(8). Tibial spur strong; all segments of legs of one colour . . . . . *T. forsteri*  
 Tibial spur slender (Fig. 153A); tarsi clearly darker than rest of each leg . . . . . *T. berniesmythi*

#### *Trittame gracilis* Koch, 1874 (Fig 151. Table 11)

*Trittame gracilis* Koch, 1874, p. 454; Main, 1985, p. 14; Raven, 1990, p. 32; Platnick, 1993, p.99.

##### MATERIAL EXAMINED

TYPE. Holotype ♂, Bowen, 21°24'S 148°33'E, NEQ, Museum Godeffroy No. 8095, ZMH, examined.

##### NEW MATERIAL EXAMINED

2 ♀♀, Pheasant Ck Station, 23°45'S 150°09'E, in remnant bottle tree (*Brachychiton*) area, 6 Jun 1992, DW, QMS19671; 1 ♀, Finch Halton, 21°09'S 148°38'E, 9 Nov 1991, RR, PL, QMS19112. All in MEQ.

##### DIAGNOSIS

Medium-sized, carapace length about 4-6. Chelicerae with several short stout spines forming rastellum. About 100 or more cuspules in broad triangular area on maxillae. PMS distinct. Thorn spines on distal femora III, and IV, and prolateral proximal patella III, IV. Preening

combs absent in ♂♂, on I-IV in ♀♀. **MALES.** Pyriform bulb with tapering embolus; no spines on palpal tibia; tibia I with distal spur and curved megaspine. **FEMALES.** Spermathecae with two separated lobes on each side.

#### DISTRIBUTION & HABITAT

Brandy Creek State Forest, near Proserpine, south of Bowen; Homevale, and Morandbah and Pheasant Creek, west of Rockhampton, MEQ. All are now or were once vine thicket or open grassland.

#### BURROW & PHENOLOGY

Doug Wallace reported that females taken from Pheasant Creek (QMS19671) were found in burrows with a thick plug doors and a shaft about 30 cm deep in a grass lawn around a house in remnant bottle-tree scrub about 10m above creek level. A penultimate ♂ was taken in April, 1993.

*Trittame augusteyni* sp. nov.  
(Figs 151, 152, Table 11)

#### MATERIAL EXAMINED

**TYPE.** Holotype ♂, Olsen's Caverns, via Rockhampton, MEQ, 23°11'S 150°28'E, 21 Apr-19 Jul 1990, DW, RR, QMS16444.

#### OTHER MATERIAL EXAMINED

Juv. ♀, 5 km N of Yeppoon, MEQ, 23°05'S 150°45'E, 20m, in semi-evergreen vine thicket, 11 Nov 1991, RR, PL, DW, QMS19134.

#### DIAGNOSIS

Differs from all other species of *Trittame* in that the upper megaspine on tibia I of ♂♂ is absent and a spur is present, only in *T. loki* and *T. kochi* are both the upper megaspine and spur absent.

PMS present, distinct. Abdomen black without pattern dorsally or ventrally. Small spiders, carapace length c.3-4. **MALES.** Tibial spur on I, upper megaspine and microspur absent. Palpal bulb pyriform, Tarsi I, II reddish orange. **FEMALES.** Unknown.

#### ETYMOLOGY

For Master John Augusteyn, of Olsen's Caverns, the type locality.

#### DESCRIPTION

##### HOLOTYPE MALE QMS16444

Carapace 3.00 long, 2.36 wide. Abdomen 2.60 long, 1.72 wide. Total length, 6.

**Colour.** Carapace and chelicerae yellow brown; legs paler, save red orange tarsi I, II, not annulated. Abdomen dorsally and ventrally black, without pattern.

**Carapace.** Pilosity: no hairs, few fine setae (totally c.100) scattered on caput and interstrial ridges and along lateral margins; striae indistinct, shallow. Bristles: no erect black beside posterior striae; c.9 anteromedially and 10 in band beside caput; 5 long thick and few more finer between PME, and 1 long thick between ALE; no long hairs only few long black bristles on lateral margins. Fovea moderately broad, procurved.

**Eyes.** Tubercle distinct. Group occupies 0.37 of head-width; front width, back width, length, 21, 24, 21, respectively. Back row recurved. MOQ front width, back width, length, 17, 19, 14, respectively. AME:ALE:PME:PLE, 7:7:6:6. Eye interspaces: AME-AME, 0.6; AME-ALE, 0.6; ALE-PLE, 1.1; PME-PME, 1.4; PME-PLE, 0; ALE-ALE, 1.3.

**Chelicerae.** Small, with broad band of long bristles prodorsally, laterally a single line of setae. Rastellum absent, long straight thick

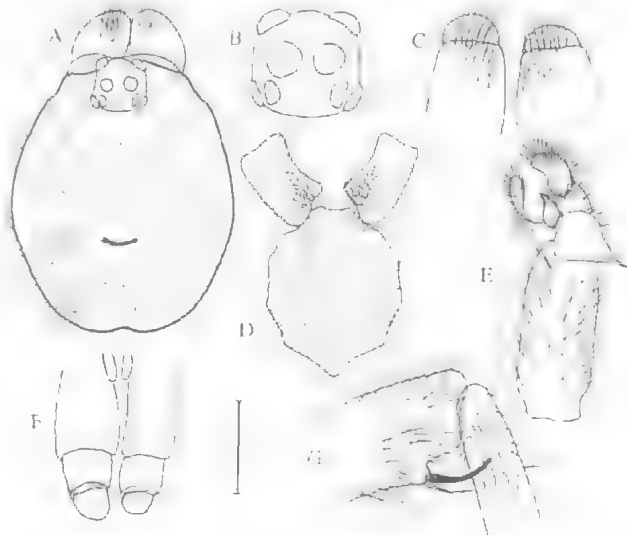


FIG. 152. *Trittame augusteyni* sp. nov., holotype ♂ (QMS16444). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, apical chelicerae, dorsal view; D, sternum, maxillae & labium, ventral view; E, tibia & metatarsus I, prolateral view; F, palpal cymbium & bulb, ventral view; G, spinnerets, ventral view. Scale line = 1mm (A, D); 0.5mm (B, C, E-G).

bristles form line on distal margin. Interchelicerar tumescence absent. Furrow promargin with 10 small spaced teeth, basomesally with few small granules.

**Labium.** 0.15 long, 0.48 wide; 4 setae along back edge, 2 setae medially, many setae on front edge. Labiosternal suture two broad shallow sigilla medially joined.

**Maxillae.** 0.78 long in front, 1.05 long behind, 0.40 wide; with 50-60 small cuspules in triangular area for half length of maxillae from inner angle. Heel broad, squared; anterior lobe small, indistinct.

**Sternum.** 1.73 long, 1.40 wide; margins setose. Sigilla all similarly small, oval, marginal. 3 distinct pairs of lyriform organs opposite coxae I, II/III, and IV.

	I	II	III	IV	Palp
Femur	2.40	2.08	1.92	2.68	1.32
Patella	1.44	1.28	1.00	1.28	0.84
Tibia	1.76	1.40	1.20	2.20	0.84
Metatarsus	1.36	1.20	1.20	2.04	-
Tarsus	1.20	1.08	0.92	1.04	0.56
Total	8.16	7.04	6.24	9.24	3.56

**Legs.** Tibia I with low ventral spur with long distally curved megaspine; upper megaspine and microspur absent. Scopulate surfaces of legs I, II pallid. Thorn spines absent. Preening combs: I of 2 weak setae on retroventral III, IV.

**Scopula.** Metatarsi: I-III, almost absent, hairs long, very sparse in distal 1/6; IV, absent. Tarsi: I-III, full, thin, hairs long, divided by narrow setal band; IV, widely divided by setal band 6-8 wide.

**Spines.** I, fe d4, pa 0, ti v1 + megaspine, me p1, v0; II, fe d3, pa 0, ti v3, me p1, v1; III, fe d2, r2, pa p3, ti r1, v6, me p2, r2, v3; IV, fe d3, r1, pa 0, ti r3, v5, me p3, r2, v5; palp, fe d1w, pa 0, ti p1, v1.

**Claws.** All bare and of similar size, as high as tufts; tufts small, slightly greater than diameter of distal tarsi in height.

**Trichobothria.** Two rows, each of c.8 for length of tibiae; c.8 on metatarsi in slightly curving row; c.3 small clavate and c.10 filiform on tarsi.

**Palp.** Bulb short, pyriform with short embolus and several fine ridges near embolus; cymbium bipartite; retrolateral face of cymbium straight.

**Spinnerets.** PMS 0.15 long, 0.05 wide, 0.03 apart, and c.0.17 of basal PLS in diameter. Basal, middle, api-

cal, total segments of PLS, 0.45, 0.13, 0.08, 0.66 long, respectively.

#### DISTRIBUTION, HABITAT & BURROW

Vine thickets at Olsen's Caverns and just north of Yeppoon, near Rockhampton, MEQ. The burrow was a short shall tube; the door is unknown.

#### *Trittame berniesmythi* sp. nov.

(Figs 151, 153, Table 11)

#### MATERIAL EXAMINED

**TYPE.** Holotype ♂, Windermere Station, via Glenmorgan, 27°27'S 149°41'E, SEQ, 18 Dec 1990-24 Sep 1991, B.J. Smyth, J. Raven, RK, QMS19554.

#### DIAGNOSIS

Differs from *T. ingrami* in that the tibial spur on leg I of ♂ ♂ is not set so far back and the tarsi are clearly darker in colour.

Medium sized; carapace length c.6. Rastellum absent. Maxillae with c.120 cuspules for 1/3 length. PMS distinct. 3 thorn spines on patellae III; preening combs on pro- and retroventral III, IV. **MALES.** Tarsi of ♂ ♂ clearly darker than other segments. Tibia I with conical spur set just back from distal corner; upper megaspine slightly

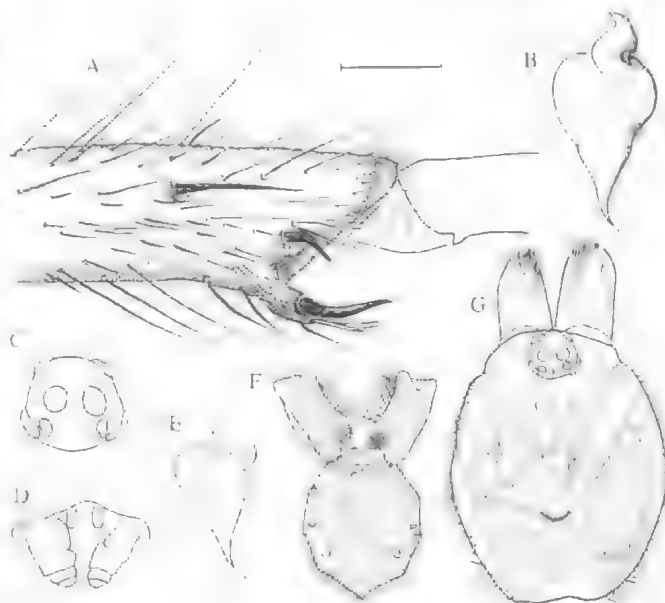


FIG. 153. *Trittame berniesmythi* sp. nov., holotype ♂ (QMS19554). A, tibia & metatarsus I, prolateral view; B, E, palpal bulb, prolateral (B) & retrolateral (E) views; C, eyes, dorsal view; D, spinnerets, ventral view; F, sternum, maxillae, labium & chelicerae, ventral view; G, carapace & chelicerae, dorsal view. Scale line = 1 mm (A, E-G); 0.5 mm (B-D).

shorter than lower one, set mid-lateral; nominal microspur is rudimentary dome. Palpal bulb pyriform with gradual change to short slightly flattened bikeeled embolus. FEMALES. Unknown.

#### ETYMOLOGY

For Mr Bernie J. Smyth, Snr, who set and maintained the traps that collected the holotype.

#### DESCRIPTION

##### HOLOTYPE MALE QMS19554

Carapace 6.00 long, 4.93 wide. Abdomen 6.13 long, 4.27 wide. Total length, 13.

**Colour.** Carapace, chelicerae, and dorsal coxae dark brown, legs yellow brown, not annulated; tarsi I (II lesser) and cymbia and all patellae clearly darker than tibiae or metatarsi. Abdomen dorsally light mottled purplish brown; ventrally pallid.

**Carapace.** Pilosity: uniform cover of long fine silver hairs and short black bristles; striae distinct, darker but narrow. Bristles: c.20 erect black beside posterior striae; c.15 anteromedially and c.20 in band beside caput; c.8 thick and few finer between PME, and c.8 long thick and few finer between ALE; long silver or black hairs and long black bristles on lateral margins. Fovea short, strongly procurved.

**Eyes.** Tubercle steeply defined in front and back. Group occupies 0.31 of head-width; front width, back width, length, 52, 67, 51, respectively. Back row procurved. MOQ front width, back width, length, 44, 45, 32, respectively. AME:ALE:PME:PLE, 18:18:8:23. Eye interspaces: AME-AME, 0.3; AME-ALE, 0.5; ALE-PLE, 1.1; PME-PME, 1.5; PME-PLE, 0.1; ALE-ALE, 0.9.

**Chelicerae.** Few long silver hairs mixed with long black bristles prodorsally, laterally narrow band of silver hair and bristles. Rastellum and mound absent; distal edge only with long bristles. Intercheliceral tumescence absent. Furrow promargin with 7 spaced teeth, basomesally with c.30 fine granules, confined to basal 2/3.

**Labium.** 0.30 long, 0.63 wide; very short; c.10 long setae clustered around anterior indentation, other setae slender. Labiosternal suture a narrow continuous groove.

**Maxillae.** 1.56 long in front, 2.03 long behind, 0.79 wide; with c.120 blunt cuspules on distinct low mound in broad triangle for 1/3 length. Heel rounded, barely produced; anterior lobe small with long groove.

**Sternum.** 2.86 long, 2.35 wide. Sigilla all brown on yellow brown sternum; posterior pair oval, c.10% of sternal width long and as far from margin; middle pair oval, smaller, 1/2 its length from margin; anterior smaller, circular, marginal.

**Legs.** Tibia I with conical spur set just back from distal corner with long upcurved megaspine and cluster of thick, equally long bristles on spur tip below megaspine; upper megaspine slightly shorter than lower one, set mid lateral; above it nominal microspur is rudimentary dome. Metatarsi I, II, not pallid, slightly incrassate for distal 1/4; tarsi I, II, pallid in distoventral 1/2, III, IV entirely pallid ventrally. 3-4 long thorn spines on patellae III. Preening combs: I of 2-3 setae on pro- and retroventral III, IV.

	I	II	III	IV	Palp
Femur	5.20	4.67	4.27	5.67	2.67
Patella	2.80	2.53	2.00	2.53	1.53
Tibia	4.00	3.33	2.73	4.93	1.87
Metatarsus	3.40	2.73	3.13	5.13	--
Tarsus	2.40	2.53	2.00	2.87	1.20
Total	17.80	15.79	14.13	21.13	7.27

**Scapula.** Metatarsi: I, II, for distal 4/5 (I)-1/2 (II) sparse, entire; III, IV, in distal 1/2 (III)-1/4 (IV), mixed with setae. Tarsi: I, II, full, weak, entire save for several long erect setae, 2-3 very long along midline; III, IV, divided by setal band 4-6 (III), 8-10 (IV) wide.

**Spines.** I, fe p2 d5, pa 0, ti p2 + one megaspine, v3 + one megaspine, me p1, v0; II, fe p1, d3, pa 0, ti p2, v4, me p1, v0; III, fe p2d3, r3, pa p3-5, ti r2, v6, me p2, r2, v3; IV, fe d5, r2, pa 0, ti p1, r2, v10, me p2, r5, v6; palp, fe 0, pa p2, ti p2.

**Claws.** All bare; claws on leg I slightly smaller than on IV; claws evident above tufts and tufts higher than tarsi.

**Trichobothria.** Two rows, each of c.10 for length of tibiae; c.12 on metatarsi in curved row; c.2 small clavate and c.15 filiform on tarsi.

**Palp.** Bulb pyriform with gradual change to short slightly flattened bikeeled embolus; cymbium bilobed, lobes dissimilar; retrolateral face of cymbium slightly concave.

**Spinnerets.** PMS small, distinct; 0.33 long, 0.16 wide, 0.13 apart, and c.0.43 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 0.68, 0.14, 0.08, 0.90 long, respectively.

#### DISTRIBUTION & HABITAT

Cattle-grazed brigalow scrub on 'Windermere' Station, just south of Glenmorgan, SEQ.

***Trittame forsteri* Raven, 1990**  
(Fig. 152, Table 11)

*Trittame forsteri* Raven, 1990, p. 32; Platnick, 1993, p.99.

**MATERIAL EXAMINED**  
See Raven (1990).

**DIAGNOSIS**

Males differs from those of *T. ingrami* in possessing a microspur; ♀♀ have the inner spermathecal lobes shorter.

Medium-sized, carapace length about 4-5. Maxillae with about 100 cuspules. Rastellum absent. Preening combs present. PMS small. Eye group slightly wider behind than in front. **MALES.** Pyriform bulb with tapering embolus keeled; tibia I with distal spur bearing two curved megaspines. **FEMALES.** With two pairs of spermathecal lobes, each pair has a short, slightly curved, mesal lobe and longer folded, sigmoidal ectal lobe.

**DISTRIBUTION & HABITAT**

Rainforest at Dalrymple Heights, near Eungella, Round Hill Head, in MEQ, and from semi-evergreen vine thicket on the western slopes of the Great Dividing Range in the Bunya Mountains in SEQ.

***Trittame ingrami* Raven, 1990**  
(Figs 12D, 13L, 13M, 151, 154, Table 11)

*Trittame ingrami* Raven, 1990, p. 34; Platnick, 1993, p.99.

**MATERIAL EXAMINED**

**TYPES.** Holotype ♂, Marlaybrook, near Bunya Mts National Park, 26°54'S 151°35'E, 1-6 Mar 1976, under logs and stones, VED, RJR, QMS 1628; paratype ♂, same data but QMS1630; allotype ♀, same data but 2 Mar 1976, QMS1629.

**DIAGNOSIS**

Males differ from those of *T. forsteri* in the more slender tibial spur and megaspines and in having a ledge between the embolus and basal portion of the bulb; ♀♀ have the outer of the four separate spermathecal lobes shorter in *T. ingrami*, whereas in *T. forsteri* the outer lobes are much longer.

Medium-sized; carapace length about 5-7. Chelicerae without rastellum. Over 100 cuspules in broad triangular area on maxillae. PMS distinct. Thorn spines absent. Preening combs



FIG. 154. *Trittame ingrami* Raven, holotype ♂. A, palpal bulb; B, tibia I; both prolateral view. Scale line = 0.5mm.

present. **MALES.** Short palpal bulb and embolus; no spines on palpal tibia; tibia I with distal spur bearing curved megaspine; microspur minute, upper megaspine long curved. **FEMALES.** Spermathecae are two separated lobes on each side.

**DISTRIBUTION & HABITAT**

*T. ingrami* is known only from the station 'Marlaybrook' in a semi-evergreen vine thicket with bottle trees (*Brachychiton*) on the western slope of the Bunya Mountains. This is the most southerly known locality of *Trittame*.

***Trittame kochi* Raven, 1990**  
(Figs 8A, B, 16D, 150, 155, Table 11)

*Trittame kochi* Raven, 1990, p. 37; Platnick, 1993, p.99.

**NEW MATERIAL EXAMINED**

♂, Cape Tribulation, NEQ, 16°05'S 145°26'E, 'Pilgrim Sands', rainforest, pitfall traps, 5 Nov 1991-19 Jul 1992, RR, PL, QMS19680.

**DIAGNOSIS**

Males differ from those of the sympatric *T. loki* in the smaller size and the small but distinct rastellar mound.

Medium-sized, carapace c.4-6 long. Dorsal abdomen entirely black. Chelicerae with 10-12 short curved spines on distinct mound forming rastellum. c.100 cuspules in dense cluster on maxillae; labium without cuspules. PMS distinct. Thorn spines absent. **FEMALES.** Preening combs on metatarsi I-IV. Paired claws bare. Spermathecae two, each a short medial lobe with longer lobe with enlarged tip. **MALES.** Tibial spur and microspur absent. Bulb simple pyriform, keels and ridges not evident; embolus originates

gradually; cymbium deeply incised; retrolateral face of cymbium concave.

#### DESCRIPTION

##### MALE QMS19680

Carapace 4.44 long, 3.63 wide. Abdomen 3.88 long, 2.69 wide. Total length, 9.

**Colour.** Carapace and chelicerae dark brown, femora brown, other leg segment paler, not annulated. Abdomen grey brown without pattern.

**Carapace.** Pilosity: uniform pile of brown hair and short black bristles; striae indistinct, narrow. Bristles: c.4 erect black beside posterior striae; c.10 anteromedially and few in band beside caput; few long thick and few finer between PME, and c.6 long thick and 2-4 finer between ALE; short brown hairs and short black bristles on lateral margins. Fovea short, procurved.

**Eyes.** Group occupies 0.33 of head-width; front width, back width, length, 40, 48, 40, respectively. Back row procurved. MOQ front width, back width, length, 33, 35, 26, respectively. AME:ALE:PME:PLE, 16:13:10:14. Eye interspaces: AME-AME, 0.2; AME-ALE, 0.5; ALE-

PLE, 1.0; PME-PME, 1.4; PME-PLE, 0; ALE-ALE, 1.1.

**Chelicerae.** Small; narrow band of brown bristles prodorsally and laterally. Rastellum 8-10 long strong spines on low but distinct mound overhanging fang. Intercheliceral tumescence absent but basal area pallid. Furrow promargin with 7 spaced teeth, basomesally with 10-15 small teeth.

**Labium.** 0.38 long, 0.78 wide; labiosternal suture is two sigilla medially joined.

**Maxillae.** 1.25 long in front, 1.56 long behind, 0.63 wide; with c.100-120 cuspules in inner angle. Heel squared; anterior lobe broad, distinct.

**Sternum.** 2.34 long, 2.13 wide. Sigilla all distinct, darker brown than sternum; posterior pair oval, 0.28 long, 0.13 from margin; other subcircular, separate from margin.

**Legs.** Tibia I without spur, not incrassate. 2-3 thorn spines on prolateral patella III. Preening combs: 1 of 2 setae or slender spines on retroventral III, IV. Tarsi I, II dorsoventrally flattened, less so on III; tarsi IV cylindrical.

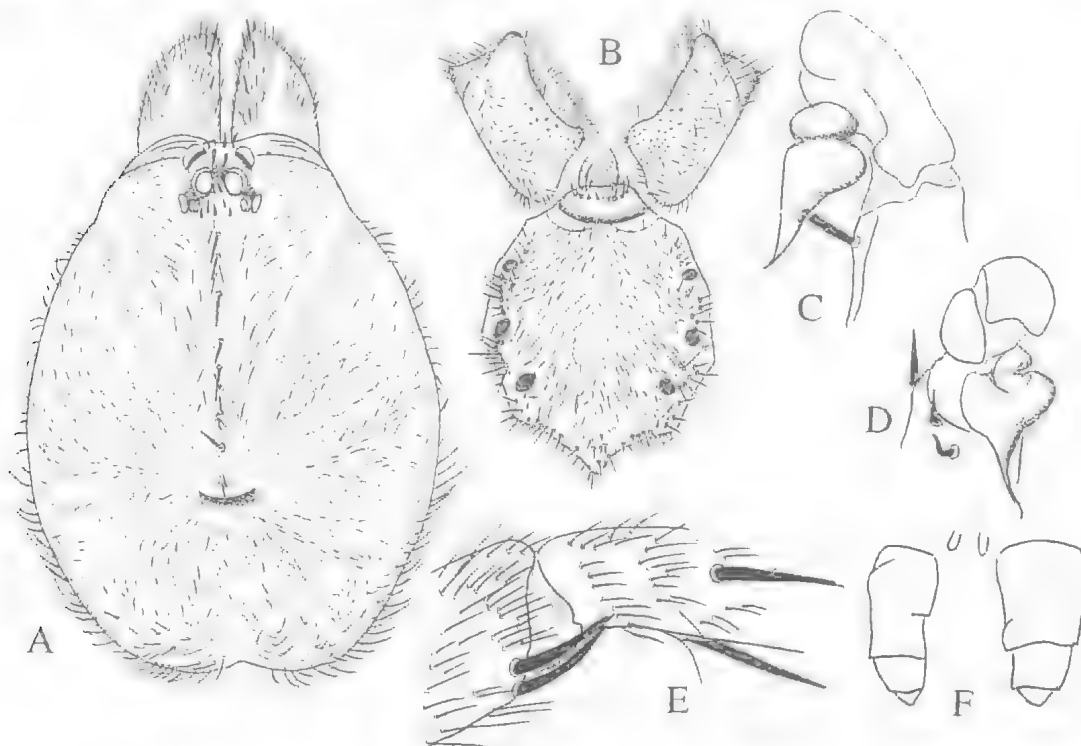


FIG. 155. *Tritame kochi* Raven, ♂ (QMS19680). A, carapace & chelicerae, dorsal view; B, sternum, maxillae, labium, ventral view; C, D, palpal bulb, retrolateral (C) & ventral (D) views; E, tibial spur, prolateral view; F, spinnerets, ventral view. Scale line = 1mm (A, B); 0.5mm (C-F).



**Scopula.** Metatarsi: I, II, full, sparse; III, IV, absent. Tarsi: I, II, full, thin, hairs short, confined to lower 90°, entire; III, intermixed with setae; IV, divided by wide setal band 8-10 wide.

**Spines.** I, fe p1, d5, pa v2, ti p2, v6, me p2, v4; II, fe p1, d5, pa p1, ti p2, v7, me p3, v3; III, fe p2, d5, r3, pa p3, r1, ti p2, d1, r2, v9, me p5, r4, v5; IV, fe p1, d5, r1, pa r1, ti p1, d1, r4, v11, me p4, r4, v7; palp. fe p1, d3, pa 0, ti p1, v3.

	I	II	III	IV	Palp
Femur	3.50	3.06	2.88	3.88	3.06
Patella	2.03	1.81	1.59	1.94	1.34
Tibia	2.75	2.13	1.75	3.06	1.47
Metatarsus	1.97	1.78	1.94	3.31	-
Tarsus	1.44	1.34	1.25	1.41	0.84
Total	11.69	10.12	9.41	13.60	6.71

**Claws.** No teeth on any claws; all claws higher than tufts.

**Trichobothria.** Two rows, each of c.9 for 2/3 of tibiae; c.10 on metatarsi in curved row; c.5 small, basal clavate and c.10 filiform on tarsi.

**Palp.** Bulb simple pyriform, keels and ridges not evident; embolus originates gradually; cymbium deeply incised; retrolateral face of cymbium concave.

**Spinnerets.** PMS 0.16 long, 0.08 wide, 0.05 apart, and about 0.24 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 0.41, 0.20, 0.08, 0.69 long, respectively.

#### DISTRIBUTION, HABITAT & BURROW

Lowland rainforest at the type-locality, Mt Finlay, Fritz Creek, and Cape Tribulation, NEQ. The burrow consists of a thin, ventrally hinged door behind which is a short, almost straight shaft. About 5mm behind the door, the shaft widens to about 2-3 times its diameter for 10-20 mm and then constricts again to a similar diameter to that of the second door. The door is roughly circular, slightly concave and thick enough to be rigid but not a strong plug.

***Trittame loki*** Raven, 1990  
(Figs 6E, 150, Table 11)

*Trittame loki* Raven, 1990, p. 39; Platnick, 1993, p.99.

#### NEW MATERIAL EXAMINED

♂, Garradunga, 2km E, NEQ, 17°28'S 146°01'E, G. Milledge, 2 Apr 1991, MV K-1037; ♀, Crystal Cascades, Cairns, SAM.

#### DIAGNOSIS

Differs from *T. kochi* in having no rastellum, the adults are larger and have no door on the burrow at the surface.

Medium-sized, carapace length about 5-8. Chelicerae with long curved stiff setae forming weak rastellum. About 100 cuspules on maxillae. PMS distinct. Thorn spines and preening combs absent. MALES. Palpal bulb pyriform with tapering embolus; spines on palpal tibia; tibia I without spur. FEMALES. Spermathecae, two, each with two lobes fusing near base.

#### DISTRIBUTION & HABITAT

Rainforest at Cape Tribulation and Mt Windsor, Thornton Peak, Mt Hartley, Innisfail, Paluma near Townsville, and near Cairns, in NEQ. The habitat at Garradunga, near Bowen, is open forest but moist riverine corridors may be present.

***Trittame mocolli*** sp. nov.  
(Figs 151, 156, Table 11)

#### MATERIAL EXAMINED

TYPE. Holotype ♂, Biloela [24°24'S, 150°31'E], SEQ, 9 Mar 1988, A. McColl, QMS11122.

#### DIAGNOSIS

Males differ from those of *T. ingrami* in that upper tibial megaspine is set in the normal high position (not low) and in the distal position of the spur, also the anterior lobe occupies more than half the width of the maxillae (cf. much less than half) and the labiosternal suture consists of two separate sigilla and not one continuous groove. Males differ from those of *T. forsteri* in the longer filamentous portion of the embolus.

Medium sized; carapace length c.7. Rastellum absent. Maxillae with c.150 or more cuspules for 2/5 length. PMS distinct. Thorn spines absent preening combs on pro- and retroventral III, IV. MALES. Tarsi of ♂♂ concolorous with other segments. Tibia I with short spur on distal ventral edge; microspur evident as minute lobe, upper megaspine long, downcurved. Bulb small, pyriform, tapering gradually to embolus with many fine grooves; embolus as long as tapered portion. FEMALES. Unknown.

#### ETYMOLOGY

For Mr Angus McColl, Experimental Officer, Department of Primary Industries, Queensland, in recognition of the many valuable spiders he has referred to the Queensland Museum for identification.

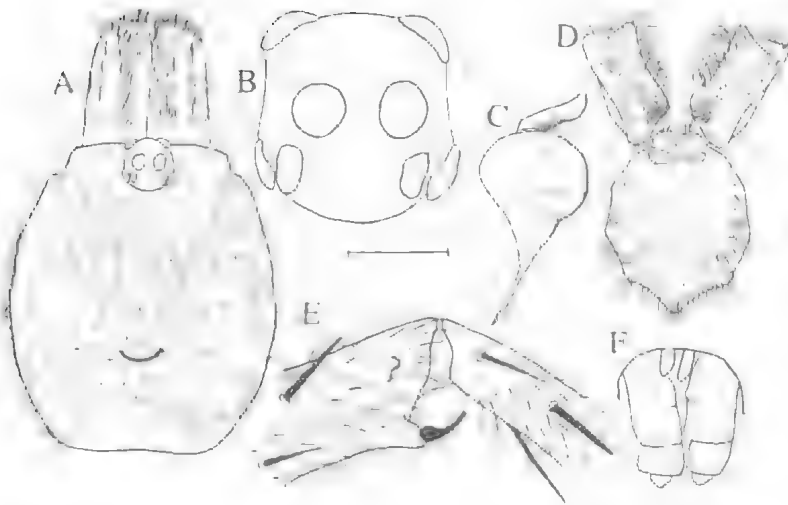


FIG. 156. *Trittame mccolli* sp. nov., holotype ♂ (QMS11122). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, palpal bulb, ventral view; D, sternum, maxillae, labium, ventral view; E, tibial spur (Prolateral view); F, spinnerets, ventral view. Scale line = 2mm (A, D); 1mm (E); 0.5mm (B, C, F).

#### DESCRIPTION

##### HOLOTYPE MALE QMS11122

Carapace 7.20 long, 5.87 wide. Abdomen 5.87 long, 3.73 wide. Total length, 17.

**Colour.** Carapace and chelicerae red brown, legs orange brown, not annulated; all patellae slightly darker than other articles. Abdomen dorsally dark brown with pallid area anteriorly; ventrally pallid with brown marks near spinnerets.

**Carapace.** Pilosity: distinct pile of long wavy silver hairs intermixed with long and short black bristles, not obscuring carapace; striae indistinct. Bristles: c.10-15 erect black beside posterior striae; c.10 anteromedially and c.15 in hand beside caput; c.8 thick and few finer between PME, and c.15 thick and few finer between ALE; pile of long silver hairs and short brown bristles on lateral margins. Fovea short, strongly procurved.

**Eyes.** Tubercle steeply defined front and back. Group occupies 0.25 of head-width, Back row recurved. Eye group front width, back width, length, 59, 67, 58, respectively. MOQ front width, back width, length, 47, 50, 40, respectively. AME:ALE:PME:PLE, 20:20:9:20. Eye interspaces: AME-AME, 0.3; AME-ALE, 0.6; ALE-PLE, 1.1; PME-PME, 1.5; PME-PLE, 0.5; ALE-ALE, 1.1.

**Chelicerae.** Narrow band of silver hairs and many short bristles prodorsally, laterally 2 narrow bands of hairs and short bristles. Rastellum absent save for long curved bristles overhanging

fang. Intercheliceral luminescence absent. Furrow promargin with 7 separated teeth, basomesally with 6 small teeth and c.10 granules all extending to basal half of furrow.

**Labium.** 0.40 long, 1.07 wide; short; c.8 long curved bristles just behind front edge; uniformly short bristles behind that. Labiosternal suture two distinct sigilla separate from lateral margins and each other.

**Maxillae.** 1.87 long in front, 2.33 long behind, 0.93 wide; with c.150 or more blunt cuspules in inner angle for 2/5 length of maxilla. Heel broadly produced; anterior lobe

broad with long groove.

**Sternum.** 3.67 long, 3.00 wide. Sigilla: posterior pair c.11% of sternal width long, oval, submarginal; others oval, long axis transverse, marginal.

**Legs.** Tibia I with short conical spur directly off distal ventral edge, lateral line from dorsal tibia to base of spur a gently curving diagonal, megaspine moderately long curved; microspur evident as minute lobe, upper megaspine long, downcurved. Thorn spines and thorn setae absent. Preening combs: 1 of 2-3 setae on pro- and retroventral III, IV. Metatarsi I, II pallid and slightly but distinctly incrassate in distal 1/6; all tarsi pallid ventrally.

	I	II	III	IV	Palp
Femur	5.47	5.07	5.00	6.27	3.67
Patella	3.27	2.87	2.67	2.73	2.00
Tibia	3.87	3.20	2.87	5.07	2.60
Metatarsus	3.33	3.20	3.33	5.67	-
Tarsus	2.40	2.40	2.47	2.40	1.33
Total	18.34	16.74	16.34	22.14	9.60

**Scopula.** Metatarsi: I, II, distal 1/2, sparse to distal 1/6 where denser, entire; III, IV, sparse, divided, in distal 1/2 (III)-1/4(IV). Tarsi: I, II, full, entire with 3-4 (I), 8-15 (II) setae medially; III, divided by setal band 8-10 wide, setal shaft of similar diameter to scopula hair; IV, divided by setal band 8-10 wide, setal shaft much thicker than scopula hair.

**Spines.** I, fc p1, d3, pa 0, ti p2 + megaspine, v6 + megaspine, me p1, v1; II, fc p1, d4, pa 0, ti p1,

v4, me p3, v2; III, fe p1, d3, r3, pa p3, ti r2, v8, me p3, r3, v5; IV, fe p1, d4, r4, pa 0, ti p2, d1, r3, v11, me p3, r3, v6; palp, fe p2, d3, pa 0, ti p2, v5.

**Claws.** All claws bare; tufts same height as tarsal diameter; claws set slightly lower than tufts.

**Trichobothria.** Two rows, each of c.11 for length of tibiae; c.14 on metatarsi in strongly curved row; 4 small clavate and c.13 filiform on tarsi.

**Palp.** Bulb small, pyriform, tapering gradually to embolus which has many fine grooves; embolus slender, as long as tapered portion; cymbium with slightly dissimilar lobes, division occurs distally; retrolateral face of cymbium slightly concave.

**Spinnerets.** PMS 0.32 long, 0.14 wide, 0.06 apart, and c.0.38 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 0.76, 0.33, 0.08, 1.17 long, respectively.

#### DISTRIBUTION & HABITAT

Biloela, SEQ, an area of Bottle Tree (*Brachychiton*) vine thickets.

***Trittame rainbowi* sp. nov.**  
(Figs 150, 157, 158, Table 11)

#### MATERIAL EXAMINED

**TYPES.** Holotype ♂, Mt Cleveland, 19°15'14-32"S 147°01'40"-02"E, summit, rainforest, pitfall and intercept traps, 23 Mar-13 May 1991, DC, QMS18970; allotype ♀, same locality, altitude 500m, GBM, DC, 22-24 Mar 1991, QMS17835; 2 ♀, same data, QMS17853; 2 ♀ ♀, Mt Halifax, SE ridge, at 950m, 19°07'S 146°23'E, 19-21 Mar 1991, GBM, DC, QMS17836. All in NEQ.

#### DIAGNOSIS

Differs from *T. loki* in the more extensive maxillary cuspules reaching almost the length of the maxillae and in having scopula on metatarsi III, IV. Also, in *T. loki*, the back edge of the PME is behind that of the PLE, not in front or in line as in *T. rainbowi*.

Medium to large; carapace length c.8. Rastellum a low mound in ♀ ♀; absent in ♂ ♂. Maxillae with c.200-300 cuspules for almost full length. PMS distinct. Thorn spines and preening combs absent. MALES. Intercheliceral tumescence a small pallid area. Tarsi of ♂ ♂ concolorous with other segments. Tibia I with distal conical spur and apical upcurved megaspine; upper megaspine set against small mounded microspur. Palpal bulb short pyriform with short embolus and low short distal keel. FEMALES.

Basifemoral thorns on I, II, IV. All claws bare. Spermathecae two, very small, each two tiny lobes one short medial and one longer lateral.

#### ETYMOLOGY

For William Joseph Rainbow (1856-1919), Entomologist, Australian Museum, in recognition of his contribution to Australian arachnology.

#### DESCRIPTION

##### HOLOTYPE MALE QMS18970

Carapace 8.25 long, 6.88 wide. Abdomen 7.19 long, 4.69 wide. Total length 17.

**Colour.** Carapace dark red brown with red flashes in anterior striae and in line medially behind eye group, chelicerae dark orange brown, and legs brown, not annulated. Abdomen entirely blue black, without pattern, booklung covers and spinnerets yellow brown.

**Carapace.** Pilosity: many long black bristles in radiating lines and along striae edges mixed with light pile of silver hairs; anterior striae distinct, wide. Bristles: 6-8 slightly thicker erect black beside posterior striae; many anteromedially, not enlarged, and setae on caput weaker than on thoracic portion; 10-15 weak, none strong, on eye group; light pile of long silver hairs and line of long black bristles on lateral margins. Fovea moderately wide, procurved.

**Eyes.** Tubercle distinct. Group occupies 0.27 of head-width; front width, back width, length, 46, 56, 47, respectively. Back row procurved. MOQ front width, back width, length, 37, 38, 32, respectively. AME:ALE:PME:PLE, 17:14:12:16. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.6; ALE-PLE, 1.4; PME-PME, 1.3; PME-PLE, 0; ALE-ALE, 1.4.

**Chelicerae.** Few long and many short brown bristles prodorsally, laterally a narrow band of short bristles. Rastellum absent but very long curved bristles over inner lower corners. Intercheliceral tumescence a small pallid area. Furrow promargin with 6 small spaced teeth, basomesally with 10-12 small teeth.

**Labium.** 0.48 long, 1.32 wide; central band of fine setae. Labiosternal suture a narrow groove including two raised, separated sigilla.

**Maxillae.** 2.60 long in front, 3.08 long behind, 1.28 wide; with over 200 small blunt cuspules densely packed from inner angle and extending in long slender triangle almost the full length of maxillae. Heel distinctly angular and produced; anterior lobe broad, indistinct.

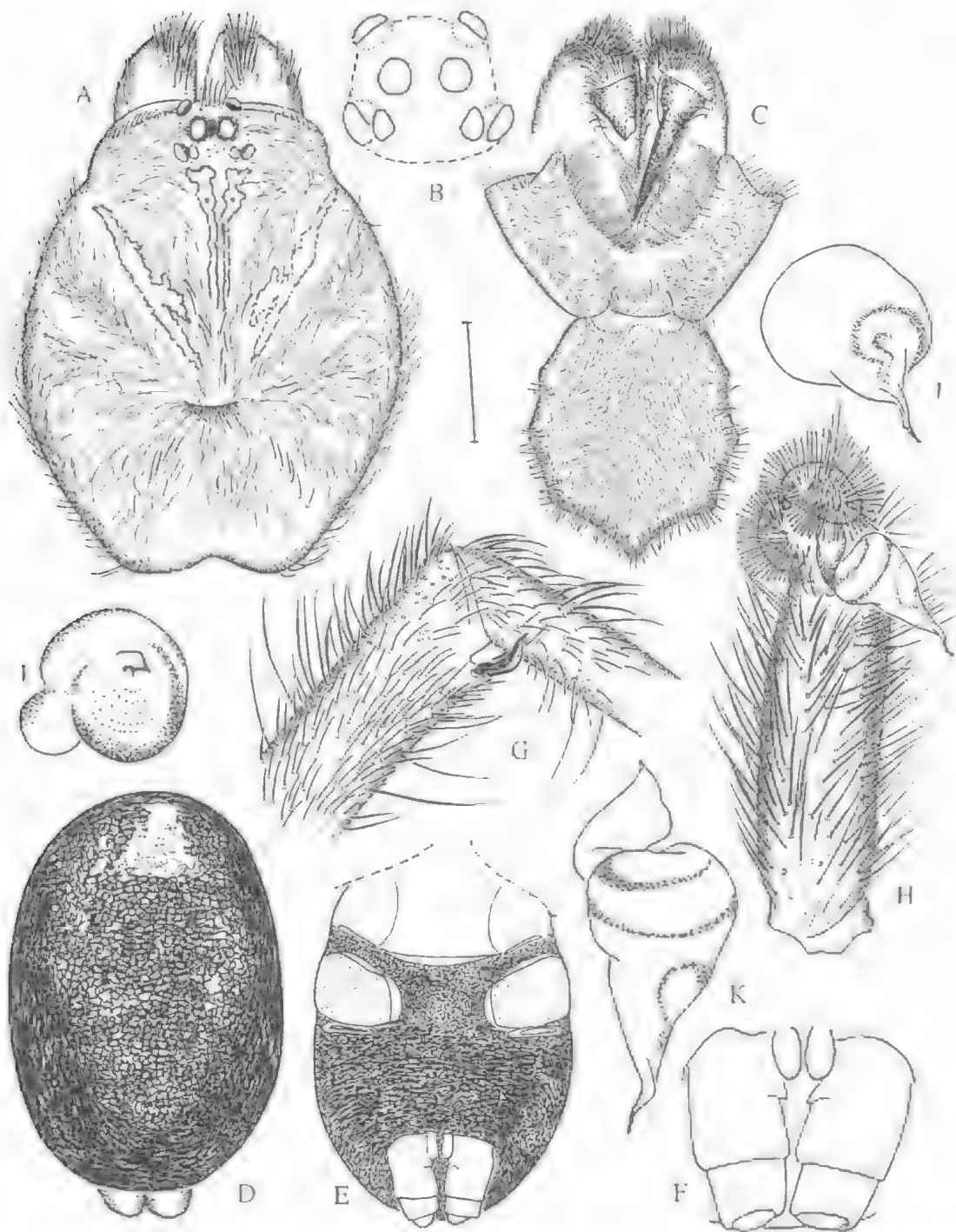
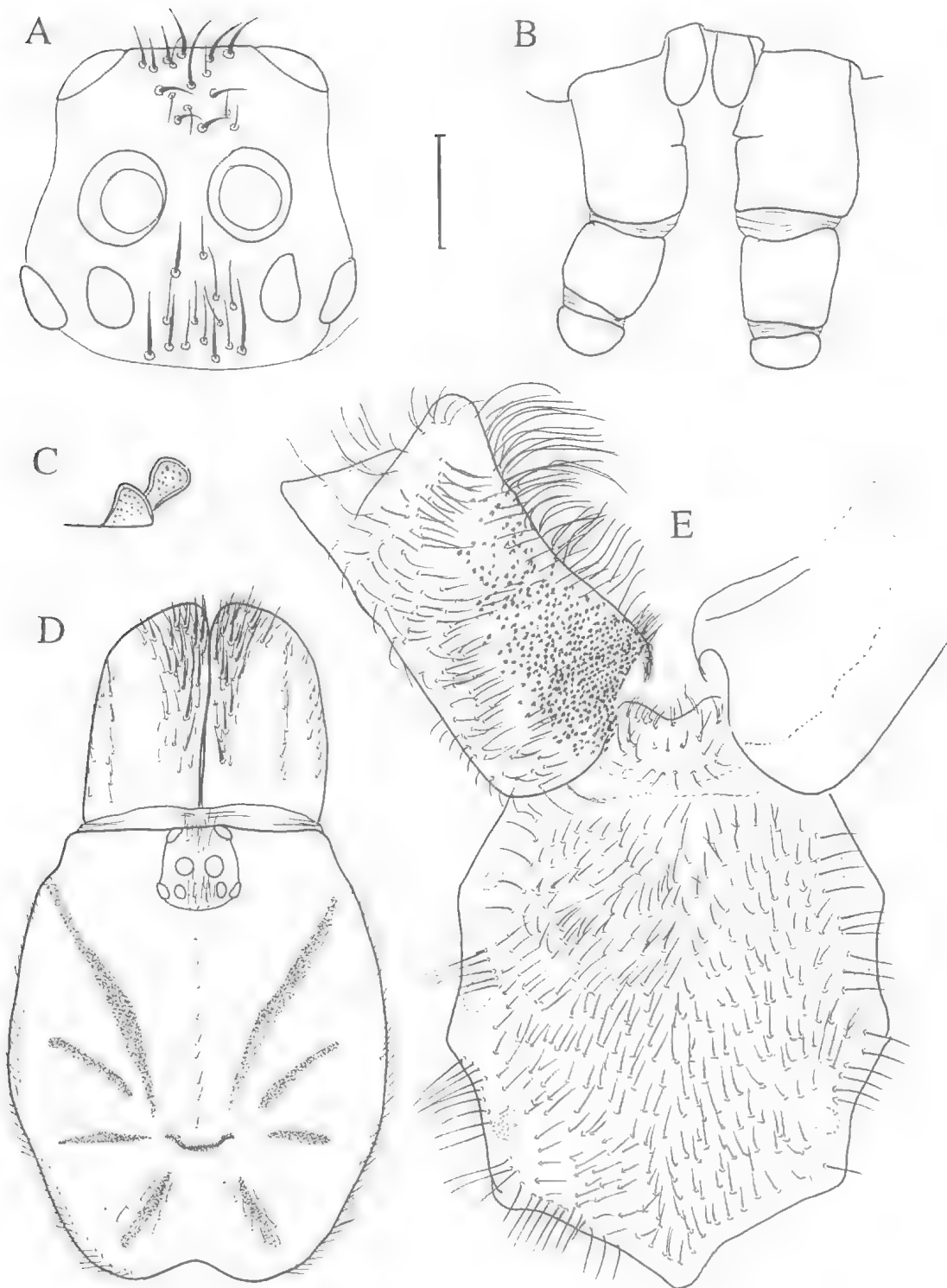


FIG. 157 *Trogane rainbowi* sp. nov., holotype ♂ (QMS18970). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, chelicerae, sternum, maxillae & labium, ventral view; D, E, abdomen, dorsal (D), ventral view (E); F, spinnerets, ventral view; G, tibia & metatarsus I, prolateral view; H, palpal tibia, cymbium & bulb, ventral view; I-K, palpal bulb, axial (I), oblique axial (J) & ventral view (K). Scale line = 2mm (A, C-E); 1mm (B, F-H); 0.5mm (I-K).



**Sternum.** 4.32 long, 3.80 wide. Sigilla oval, posterior pair moderately large, submarginal; others smaller marginal.

**Legs.** Tibia I with distal conical spur and apical upcurved megaspine; prolaterally a slender down curved megaspine set against small mounded microspur. Thorn spines and preening combs absent. Scopulate areas of tarsi pallid, not incrassate.

	I	II	III	IV	Palp
Femur	7.38	6.56	6.06	8.44	4.00
Patella	3.94	3.63	3.13	3.56	2.19
Tibia	6.06	5.00	4.38	7.00	3.13
Metatarsus	5.19	4.63	5.00	8.13	-
Tarsus	3.00	2.94	2.75	3.00	1.56
Total	25.57	22.76	21.32	30.13	10.88

**Scopula.** Metatarsi: I-IV, hairs long from distal half, distally a small pallid area of denser hair, divided by setae. Tarsi: I-III, ventral band with short hairs, lateral band longer, moderately dense, not obscuring cuticle, mixed with setae; IV, similar but divided by distally widening setal band 6-12 setae wide.

**Spines.** I, fe p2, d2, pa 0, ti p2 + megaspine, v3 + megaspine, me p1; II, fe p4, d3, pa 0, ti p2, v4, me p1; III, fe p1, d3, r4, pa p2, ti p1, r2, v5, me p1, r2, v1; IV, fe d3, r3, pa 0, ti p1, r3, v6, me p2, r3, v4; palp, fe p1, pa 0, ti 0.

**Claws.** All extend just above small tufts and bare; tufts barely exceed diameter of tarsi.

**Trichobothria.** Two rows, each of c.9 for two-thirds length of tibiae; c.15 on metatarsi in curving row; c.18 filiform on tarsi, none clavate.

**Palp.** Bulb short pyriform with short embolus and low short distal keel; retrolateral face of cymbium convex.

**Spinnerets.** PMS 0.52 long, 0.22 wide, 0.08 apart, and c.0.30 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 1.18, 0.38, 0.15, 1.71 long, respectively.

#### ALLOTYPE FEMALE QMS17835

Carapace 8.25 long, 6.44 wide. Abdomen 11.60 long, 7.81 wide. Total length, 23.

**Colour.** Carapace red brown, caput deeper red, chelicerae dark brown, and legs brown, not annulated. Abdomen entirely dark brown, without pattern.

**Carapace.** Pilosity: light uniform covering of fine long black hairs and shorter bristles; striae deep, distinct, narrow. Bristles: none thicker on carapace save 20-30 slightly thicker in two bands

anteromedially; 5 thicker and many finer between PME, and 4-6 long thick and several finer between ALE; narrow band of long hairs on lateral margins. Fovea short, strongly procurved.

**Eyes.** Tubercle low, distinct. Group occupies 0.27 of head-width; front width, back width, length, 46, 58, 49, respectively. Back row recurved. MOQ front width, back width, length, 35, 38, 30, respectively. AMB:ALE:PME:PLE, 13:13:11:12. Eye interspaces: AME-AME, 0.6; AME-ALE, 1.0; ALE-PLE, 2.3; PME-PME, 1.6; PME-PLE, 0.3; ALE-ALE, 1.7.

**Chelicerae.** Few long and many short bristles in wide band prodorsally, laterally two bands of short bristles. Rastellum a distinct but low mound with many long curved bristles. Furrow promargin with 7 large spaced teeth, basomesally with group of 10-15 small teeth and granules.

**Labium.** 0.69 long, 1.44 wide; line of c.8 fine setae behind transverse ridge. Labiosternal suture two narrow sigilla joined medially.

**Maxillae.** 2.75 long in front, 3.31 long behind, 1.56 wide; with 200-300 cuspules, at densest point each about one diameter from adjacent cuspules, extending along maxilla for 3/4 its length and posteriorly back towards heel; cuspules densest in inner corner more sparse in distal 1/2. Heel broad, squared off and a distinctly elevated flat area; anterior lobe broad, rounded, distinct.

**Sternum.** 4.50 long, 3.75 wide; margins hirsute. Sigilla: all small, oval, marginal; posterior pair in depression; sigillate margin strongly sloping.

**Legs.** Basifemoral thorns distinct, c.7 on I, II, c.15-20 on IV. Thorn spines and preening combs absent.

	I	II	III	IV	Palp
Femur	5.81	5.00	4.50	6.25	4.06
Patella	3.69	3.38	3.06	3.50	2.38
Tibia	4.13	3.31	2.81	4.69	2.69
Metatarsus	3.06	2.69	2.94	4.81	-
Tarsus	2.13	2.00	2.00	2.38	2.06
Total	18.82	16.38	15.31	21.63	11.19

**Scopula.** Only on lower 160° of tarsi I. Metatarsi: I, II, thin, divided, in distal 3/4 (I) - 1/2 (II); III, two wide triangles in distal 1/2, divided by setal band; IV, like III but in distal 1/3. Tarsi: I, II, full, dense, continuous with claw tufts, divided by setal band 4-6 wide; III, IV, two dense lateral bands parted by setal band wider than each scopulate band and covers entire ventral surface.

FIG. 158. *Trittane rainbowi* sp. nov., allotype ♀ (QMS17835). A, eye group, dorsal view; B, spinnerets, ventral view; C, spermatheca; D, carapace & chelicerae, dorsal view; E, sternum, maxillae & labium, ventral view. Scale line = 0.5mm (A); 1mm (B, E); 2mm (D); 0.25mm (C).

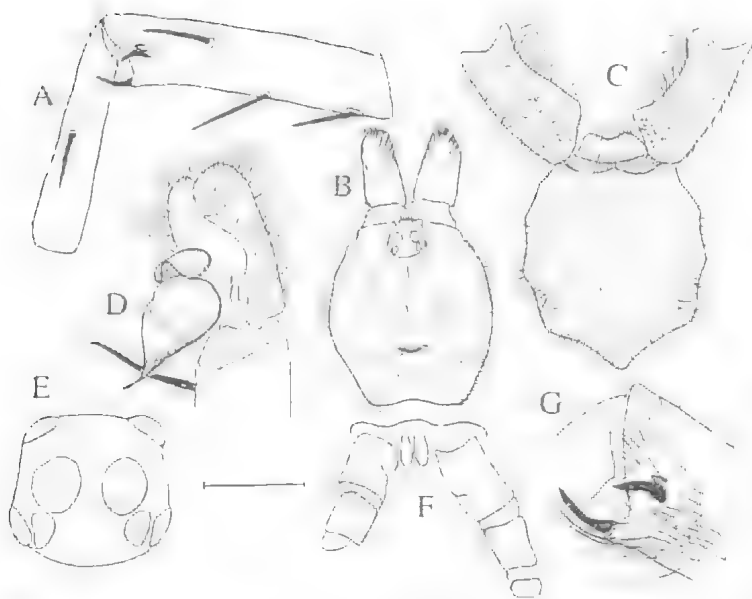


FIG. 159. *Trittame stonieri* sp. nov., holotype ♂ (QMS19123), A, G, tibia & metatarsus I, prolateral view; B, carapace & chelicerae, dorsal view; C, sternum, maxillae, labium, ventral view; D, palpal bulb, retroventral view; E, eyes, dorsal view; F, spinnerets, ventral view. Scale line = 2mm (A, B); 1mm (C, G); 0.5mm (D-F).

**Spines.** I, fe p1, pa 0, ti 0, me v2 distal and proximal; II, fe p1, pa 0, ti 0, me p1, v3; III, fe 0, pa p2, ti r1, v5w, me p2, r2, v7; IV, fe 0, pa 0, ti r2, v7w, me p1, r2, v6; palp, fe p1, pa 0, ti v3, ta 0.

**Claws.** Paired claws all bare and of similar size but noticeably smaller than tufts; palpal claw half size of tufts and leg claws, bare.

**Trichobothria.** Two rows, each of c.10 for length of tibiae; c.16 on metatarsi in sigmoidal line, 3 bases (distal) much larger than rest; c.16 filiform (only) on tarsi.

**Spermathecae.** Two, very small, each two tiny lobes one short medial and one longer lateral.

**Abdomen** with an invagination, presumably impressed sigilla, medial of each posterior book-lung aperture; shallower one near anterior book lung apertures.

**Spinnerets.** PMS cucumiform, 1.20 long, 0.56 wide, 0.12 apart, and c.0.35 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 2.40, 1.20, 0.44, 4.04 long, respectively; ventral surfaces of basal and middle articles with large domed spigots.

#### DISTRIBUTION, BURROW & HABITAT

Montane (500-950m) rainforest at Mt Cleveland and Mt Halifax, NEQ. The burrow was

open. Just below the entrance was a thick plug door covering a side chamber c.15 cm long.

#### *Trittame stonieri* sp. nov. (Figs 151, 159, Table 11)

#### MATERIAL EXAMINED

TYPE. Holotype ♂, Bondoola, MEQ, 23°11'S 150°41'E, 21 Mar-4 Sep 1991, RR, PL, DW, KW, QMS19123.

#### DIAGNOSIS

Males differ from those of *T. forsteri* in the distinctly less substantial tibial spur.

Small; carapace length c.4-5. Rastellum absent. Maxillae with c.100 cuspsules for 1/2 length. PMS distinct. MALES. Intercheliceral tumescence area pallid, setose. Tarsi of ♂♂ clearly darker than other segments. Tibia I with very small distal spur and long slender megaspine; microspur thumb-like, distinct, set against long downcurved megaspine. Palpal bulb pyriform, tapers gradually to just above embolus tip; embolus short, straight. Thorn spines and preening combs absent. FEMALES. Unknown.

#### ETYMOLOGY

For Dr Russell Stonier, on whose property the type was trapped.

#### DESCRIPTION

##### HOLOTYPE MALE QMS19123

Carapace 4.32 long, 3.64 wide. Abdomen 3.60 long, 2.56 wide. Total length, 9.

**Colour.** Carapace and chelicerae dark brown, legs orange brown, not banded. Abdomen dorsally and ventrally dark purple black without pattern.

**Carapace.** Pilosity: uniform cover of long silver hairs and long black setae; striae distinct, glabrous, narrow. Bristles: c.6 long erect black beside posterior striae; c.7 long anteromedially and c.20 in band beside caput; 4 long thick and few finer between PME, and 5 long thick and 3 finer between ALE; 5 long on clypeal edge; light bush of long silver hairs and long black bristles



on lateral margins. Fovea short, deep, distinctly procurved.

**Eyes.** Tubercle distinct. Group occupies 0.35 of head-width; front width, back width, length, 30, 34, 28, respectively. Back row straight. MOQ front width, back width, length, 25, 26, 20, respectively. AME:ALE:PME:PLE, 12:9:8:9. Eye interspaces: AME-AME, 0.3; AME-ALE, 0.4; ALE-PLE, 1.0; PME-PME, 1.2; PME-PLE, 0; ALE-ALE, 1.2.

**Chelicerae.** Narrow band of short black bristles and long silver hairs prodorsally, laterally a narrow similar band. Rastellum and mound absent. Intercheliceral tumescence absent but area pallid and setose. Furrow promargin with 7 spaced teeth, basomesally with 20-30 granules extending for basal half.

**Labium.** 0.33 long, 0.83 wide; short with c.10 long bristles in transverse line medially. Labiosternal suture two sigilla joined medially.

**Maxillae.** 1.13 long in front, 1.58 long behind, 0.65 wide; with c.100 or more small cuspules in triangular area extending for basal half of maxillae. Heel slightly produced, broad; anterior lobe small, distinct.

**Sternum.** 2.27 long, 2.00 wide; broad. Sigilla small, oval, marginal.

	I	II	III	IV	Palp
Femur	3.84	3.40	3.12	4.04	2.00
Patella	2.08	1.76	1.64	1.92	1.16
Tibia	3.04	2.44	2.04	3.72	1.32
Metatarsus	2.52	2.08	2.32	3.92	-
Tarsus	2.00	1.64	1.68	2.00	0.88
Total	13.48	11.32	10.80	15.60	5.36

**Legs.** Tibia I with very small distal spur and long slender megaspine, microspur thumb-like, distinct, set against long downcurved megaspine. Thorn spines and preening combs absent.

**Scopula.** Metatarsi: I-III, in distal 1/2, hairs long and sparse, entire; IV, two sparse bands in distal 1/3. Tarsi: I-III, full, hairs long, entire save for line of setae not parting scopula; IV, divided by setal band 3-4 wide, hairs long.

**Spines.** I, fe p1, d4, pa 0, ti p1 + megaspine, v3 + megaspine, me p1; II, fe p2, d4, pa 0, ti p1, v3, me p1; III, fe d5, r2, pa p3, ti r1, v6, me p2, r2, v3; IV, fe d3, r2, pa 0, ti p1, r2, v7, me p2, r3, v3; palp, fe p1, d2, pa 0, ti p1, v1.

**Claws.** All bare, of similar size; slightly higher than tufts.

**Trichobothria.** Two rows, each of c.9 for length of tibiae; c.10 on metatarsi in straight row; no clavate and c.20 filiform on tarsi.

**Palp.** Bulb pyriform, tapers gradually to just above embolus tip; embolus short, straight; cym-

bium two subequal lobes; both lateral faces of cymbium concave.

**Spinnerets.** PMS 0.32 long, 0.08 wide, 0.05 apart, and c.0.17 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 0.75, 0.38, 0.25, 1.38 long, respectively.

#### DISTRIBUTION & HABITAT

Bondoola, MEQ, an area of eucalypt forest with dense understorey.

*Trittame xerophila* Raven, 1990  
(Fig. 151, Table 11)

*Trittame xerophila* Raven, 1990, p. 45; Platnick, 1993, p. 99.

#### MATERIAL EXAMINED

Types, Holotype ♀, Rundle Range, 23°29'S 150°59'E, SEQ, R. Kohout, P. Filewood, VTD, 29 Mar 1975, QMS1599. Paratypes: 3 ♀, QMS1600; 1 ♀, Blackdown Tableland, MEQ, QMS1602; 4 ♀, QMS1603; 1 ♀, Sapphire, SCQ, QMS1605; 1 ♀, Roma, SCQ, QMS1606.

#### DIAGNOSIS

Females of *T. xerophila* are recognised by the distinct conical spinose rastellar process and lack of basifemoral thorns or thorn spines.

Medium to large; carapace length c.6-9. Rastellum a distinct spinose process. Maxillae with c.100-200 cuspules for half length. PMS distinct. Thorn spines and preening combs absent. MALES. Unknown. FEMALES. Basifemoral thorns absent. All claws bare. Spermathecae two, very small, each of two tiny separated lobes on each side.

#### DISTRIBUTION & HABITAT

Semi-evergreen vine thickets at Rundle Range, SEQ, Blackdown Tableland, MEQ, and the more westerly localities of Roma and Sapphire, SCQ

#### *Tungari* gen. nov.

#### TYPE SPECIES

*Tungari kenwayae* sp. nov.

#### DIAGNOSIS

*Tungari* is very similar to *Moruga* from which it differs in having a stridulatory lyra and lack of posterior median spinnerets and plesiomorphically retains the well developed eye tubercle. It is readily distinguished from them and all other mygalomorphs in having lyriform ridges basally on the anterior face of femora I in ♀♀; ♂♂ are

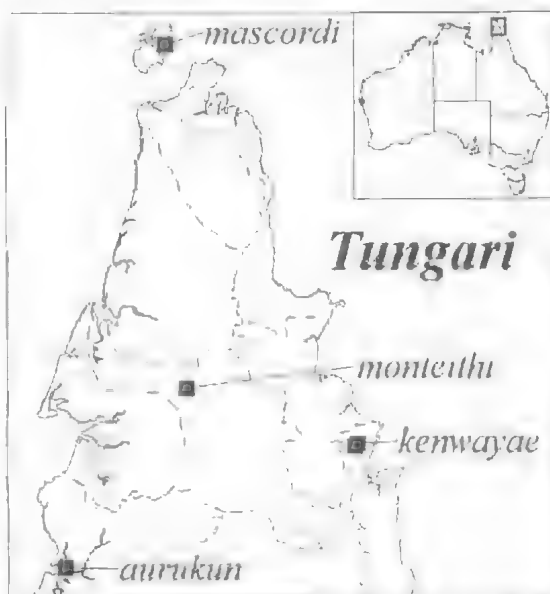
	<i>aurukun</i>	<i>kenwayae</i>	<i>mascordi</i>	<i>monteithi</i>
Size of PMS	only tufts	setose mounds	absent	minute lobe
No. maxillary cuspules	16	12-20	30	30-40
Dorsal abdomen, pattern	fishbone	mottled	weakly fishbone	mottled
♀ Spermathecal lobes	1 + 1	1 + 1	1 + 1	1 + 1
Spermathecae shape	Y-shaped	antennate domes	antennate domes	antennate domes
Rastellum	weak	weak	weak	weak
Patellar thorns III(IV)	present	absent	absent	present
Basifemoral thorns	I, II, IV	I-III	I-IV	I, II, IV
Scopula metatarsi III(IV)	1/5(absent)	1/6(absent)	absent	absent
Preening combs III(IV)	absent	present	present	absent
Habitat	=>open woodland	rainforest	open woodland	riverine forest
Distribution	Aurukun, CYP	Iron Ra, CYP	Horn I, Torres St	Gunshot Ck, CYP

Table 12. *Tungari* species, only females.

unknown. The second leg is longer than the first in contrast to other barychelids in which the first is shorter only than the fourth. The genus is rich in autapomorphies. The spermathecae have a darkly sclerotised collar at the base of outer lobes and the metatarsal trichobothria, although strongly curving as in other barychelid genera, form a distinct distal triangular cluster.

#### DESCRIPTION

Carapace long ovate; caput long, arched low, lightly hirsute; thickened bristles anteromedially on caput and beside them, no enlarged bristles arising from fovea or near posterior striae. Fovea distinctly procurved. Clypeus absent. Eyes in 3 rows; group wider behind than in front and wider behind than long; ALE-ALE subequal to that of ALE-PLE; tubercle with steeply defined posterior margin. Maxillary lyra absent. Maxillae with 13-40 cuspules spaced around inner corner, heel produced, anterior lobes small, indistinct. Cuspule microstructure: c.50µm in maximum diameter; intercrest distance, c.0.8µm apart; profile, bilaterally uniform balloon; ridge direction, continuous over smooth crest, like thumbprints; cuspule interspace, 2 or more diameters. FEMALES. Rastellum a distinct spinose mound; basomesally a group of small teeth and granules reaches about third to half length of short furrow. Labium stout, large, (length in ♀♀ c.0.6) coniform, wider than long, without cuspules; very hirsute (all other species) or uniformly hirsute (*T. kenwayae*), medial ridge not glabrous. Sternum narrow, c.1.3 times longer than wide; posterior sigilla oval submarginal; other sigilla, small, subcircular marginal. Prolateral lower surface of femora I with rectangular region, length running diagonally, highest

FIG. 160. Records of *Tungari* in Cape York Peninsula, Queensland, with catchment boundaries.

distally, of transverse stridulatory ridges presumably strummed by joint of trochanter and femora on retrolateral face of palp. Few spines on I, II; legs I, II noticeably smaller and more slender than III, IV. Scopula laterally extending for lower 200°; full, dense, entire on metatarsi and tarsi I, II; weak to absent on metatarsi III, IV; more extensive on prolateral metatarsi I, II, than retrolaterally. Scopula on I, II, not continuous with tufts. Basifemoral thorns present. Claws with one row of teeth medially on I; on IV bare; palpal claw large, bare or with small tooth (*T. kenwayae*). Preening combs present or absent. Tarsal organ distal. Two rows of trichobothria on tibiae, one row on metatarsi and 3 distally diver-

gent rows on tarsi; metatarsal row confined to distal 3/4, row is dorsal only distally where it forms a triangular cluster, proximally row curves sharply onto retrolateral face. Abdomen dorsally brown with pallid mottling forming fishbone pattern defined best posteriorly, ventrally mottled mostly white; legs not banded. Spermathecae of ♀ ♀ consist of a pair of antennate domes; lateral lobe with heavily sclerotised dark brown collar. Two spinnerets; PMS represented at most by tufts of hair. Small spigots on ventral surface of PLS, and on apex of domed apical article. MALES. Tibia I with small, low spur on distal proventral corner; megaspine long strong, slightly curved; microspur and upper megaspine absent. Two rows of teeth on claws of I-III. Palpal bulb pyriform with two high keels begin at distal half of embolus and many fine ridges; cymbium hardly bilobate; retrolateral face of cymbium slightly concave. Intercheliceral tumescence absent.

#### ETYMOLOGY

From a native word for 'song' (Cooper, 1979).

#### DISTRIBUTION

Horn Island, Iron Range, and Aurukun, Cape York Peninsula, NEQ.

#### INCLUDED SPECIES

*Tungari aurukun* sp. nov.  
*Tungari kenwayae* sp. nov.  
*Tungari mascordi* sp. nov.  
*Tungari monteithi* sp. nov.

#### *Tungari kenwayae* sp. nov.

(Figs 160-162, 163B, Table 12)

#### MATERIAL EXAMINED

Types. Holotype ♂, King Park Station, Iron Range, Cape York Peninsula, 12°45'S 143°17'E, 30 Jun 1993, M. Kenway, QMS19697, PARATYPES. ♀ allotype, Iron Range, CYP, Q, 12°44'S 143°17'E, September 1981, from the collections held by A. Hiller, QMS8205; ♀ Lamond Hill, Iron Range, 12°43'S 143°18'E, CYP, 29 Jun, 1976, RR, VTD, QMS8209; ♀, Claudie R, Iron Ra, Nov 1913-Feb 1914, MV.

#### DIAGNOSIS

Females differ from those *T. mascordi* by having fewer thorn cusps on dorsal femora and more extensive femoral lyra.

PMS represented externally at most by two low setose mounds. Maxillae with c. 12-20 cuspules. Rastellum is low mound with many (50-60) short curved but thin spine-like bristles. FEMALES. Basal femora 1 with distinct lyra of radiating

grooves and ridges. Basifemoral thorns few on I-III, c. 20 on IV. Preening combs on retrolateral metatarsi III, IV. Spermathecae two low mounds each with an outer stalk that has a terminal round lobe. MALES. Tibia I with small, low spur on distal proventral corner; megaspine long strong, slightly curved; microspur and upper megaspine absent. Two rows of teeth on legs I-III. Bulb pyriform with two high keels beginning at distal half of embolus; intermediate zone with many fine ridges; cymbium hardly bilobate; retrolateral face of cymbium slightly concave.

#### ETYMOLOGY

For Ms Marina Kenway whose interest in spiders yielded the holotype.

#### DESCRIPTION

##### HOLOTYPE MALE QMS19697

Carapace 9.19 long, 7.38 wide. Abdomen 7.50 long, 5.63 wide. Total length 19.

*Colour.* Carapace, chelicerae, and legs dark reddish brown, not annulated. Abdomen collapsed; evidently entirely brown without pattern.

*Carapace.* Pilosity: short black setae along interstitial ridges; striae distinct, narrow. Bristles: none strong beside posterior striae or anteromedially; no thicker in band beside caput; 5 long thick and few finer between PME, and 8 long thick and few finer between ALE; long hairs and long black bristles on lateral margins. Fovea short, deep, procurved.

*Eyes.* Tubercle posteriorly abrupt. Back row procurved. Group occupies 0.31 of head-width; front width, back width, length, 80, 98, 77, respectively. MOQ front width, back width, length, 63, 67, 47, respectively. AME:ALE: PME:PLE, 30:27:18:27. Eye interspaces: AME:AME, 0.4; AME-ALE, 0.7; ALE-PLE, 1.1; PME-PME, 1.3; PME-PLE, 0.1; ALE-ALE, 1.2.

*Chelicerae.* Short; narrow band of long black bristles prodorsally, laterally a broad band of setae. Rastellum and mound absent. Intercheliceral tumescence absent. Furrow promargin with 1 small distal and 5 large teeth, basomesally with 3 small teeth in distal third of furrow.

*Labium.* 0.75 long, 1.38 wide. Long; no setal pattern evident. Labio-sternal suture a broad continuous raised zone.

*Maxillae.* 2.50 long in front, 3.44 long behind. 1.25 wide; with 12-15 cuspules in inner angle. Heel small; anterior lobe short, indistinct.

*Sternum.* 5.00 long, 3.44 wide. Sigilla all distinct, oval, raised; posterior pair oval, submarginal; others subcircular, marginal.

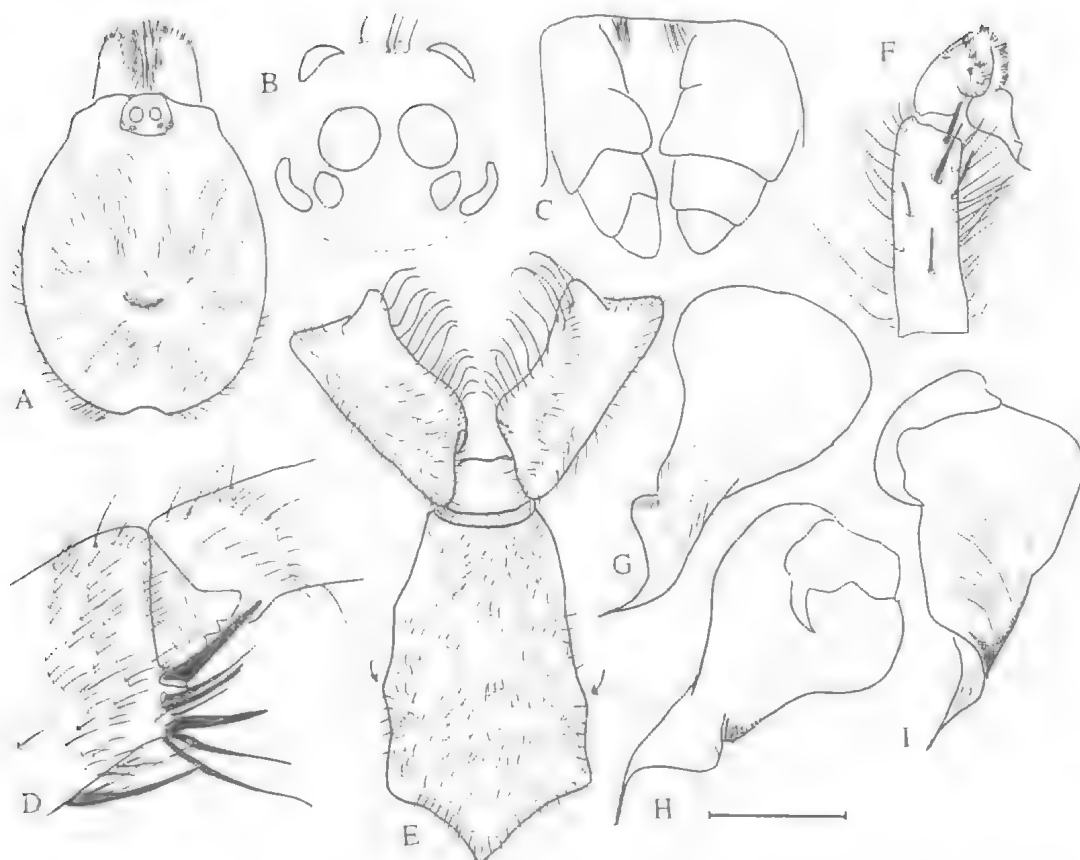


FIG. 161. *Tungari kenwayae* sp. nov., holotype ♂ (QMS19697). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, spinnerets, ventral view; D, tibia & metatarsus I, prolateral view; E, sternum, maxillae, labium ventral view; F, palpal tibia, cymbium & bulb, prolateral view; G-I, palpal bulb, retroventral (G), prolateral (H), ventral (I) view. Scale line = 4mm (A), 2mm (E, F), 1mm (B-D), 0.5mm (G-I).

	I	II	III	IV	Palp
Femur	6.81	6.56	6.25	8.25	4.50
Patella	4.25	4.13	3.75	4.25	2.81
Tibia	5.25	4.50	4.06	6.44	3.31
Metatarsus	4.13	3.94	5.06	7.94	-
Tarsus	2.38	2.19	2.00	2.63	1.56
Total	22.82	21.32	21.12	29.51	12.18

**Legs.** Tibia I with small, low spur on distal proventral corner; megaspine long strong, slightly curved; microspur and upper megaspine absent. 4-6 long thorn spines prolaterally on patella III. Preening combs: 1 of 3 setae on retroventral IV. Tarsi I, II ventrally collapsed, presumably were incrassate; metatarsi I, II, very slightly incrassate.

**Scopula.** Metatarsi: I, II, for distal 2/3, dense, entire; III, two small clusters in distal 1/6; IV, absent. Tarsi: I, II, full, dense, entire; III, IV, divided by wide setal band 8-10 wide.

**Spines.** I, fe p2, d4, pa 0, ti p2, v6 + megaspine, me p2, v4; II, fe p2, d4, pa 0, ti p2, v8, me p2, v5; III, fe p2, d6, r3, pa p6, r1, ti p1, d3, r3, v8, me p5, r6, v8; IV, fe d5, r1, pa r1, ti p2, r4, v9, me p10, r9, v10; palp, fe p1, d4, pa 0, ti p3, v5.

**Claws.** 2-4 (I) to 1-3 (III) short flat teeth on claws in 2 rows; claws of leg IV broken at base on receipt.

**Trichobothria.** Two rows, each of c.12 for length of tibiae; c.12 on metatarsi in curved row; c.4 small clavate and c.15 filiform on tarsi.

**Palp.** Bulb pyriform with two high keels beginning at distal half of embolus; intermediate zone with many fine ridges; cymbium hardly bilobate; retrolateral face of cymbium slightly concave.

**Spinnerets.** PMS absent. Basal, middle, apical, total segments of PLS, 1.25, 0.25, 0.22, 1.72 long, respectively.

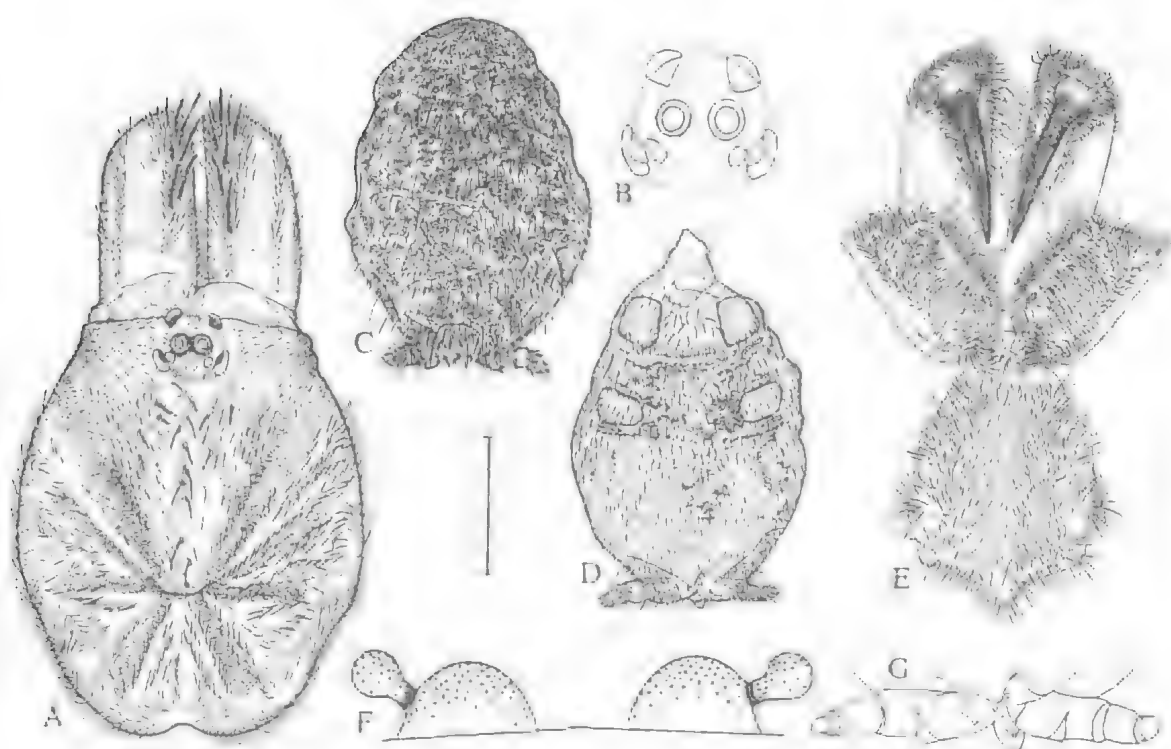


FIG 162. *Tungari kenwayae* sp. nov. Allotype ♀ (QMS8205). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, D, abdomen, dorsal (C), ventral view (D); E, chelicerae, sternum, maxillae, labium ventral view; F, spermathecae; G, spinnerets, ventral view. Scale line = 3mm (A, D); 6mm (C, E); 1.5mm (B, G); 0.75mm (F).

#### ALLOTYPE FEMALE QMS8205

Carapace 9.92 long, 7.60 wide. Abdomen 14.70 long, 11.50 wide. Total length, 28.

**Colour.** Carapace, chelicerae and legs red brown. Abdomen dorsally (cuticle separated) brown with many white spots forming no distinct pattern; ventrally pallid with lighter mottling between book-lungs and centrally.

**Carapace.** Uniform cover of fine black hairs on caput, in radial bands on thorax and on margins. c. 10 thick and several finer bristles anteromedially and more smaller bristles just behind eye group. Six thick and several finer bristles between ALE; 3 long and many smaller bristles between PME. Striae shallow, glabrous. Hirsute cuticular shelf between carapace above coxa IV. Fovea wide, deeply procurved.

**Eyes.** Tubercle abruptly defined in front and behind. Group occupies 0.33 of head-width; front width, back width, length, 57:80:65. PLE from above reniform. Back row procurved. MOQ front width, back width, length, 43:54:30. AME: ALE: PME:PLE, 14:21:11:24. AME-AME, 1.0; AME-

ALE, 1.5; ALE-ALE, 1.6; PME-PLE, 0.5; PME-PME, 2.4; ALE-PLE, 2.0.

**Chelicerae.** Stout, rounded with prodorsal band of short black curved bristles, laterally with narrow band of very short bristles. Rastellum is low mound covered with many (50-60) short curved but thin spine like bristles extending across and up chelicerae. Furrow promargin with 2 very large and 6 large teeth, basomesally with 15-20 small teeth plus 1 tooth at half the furrow length.

**Labium.** 1.28 wide, 0.80 long. Labiosternal suture a transverse groove includes two joined sigilla.

**Maxillae.** 2.48 long in front, 3.68 long behind, 1.60 wide; with c. 12-21 cuspules scattered in inner area. Heel distinctly produced to pointed; anterior lobe barely distinct.

**Sternum.** 5.20 long, 4.08 wide. Sigilla all distinct, marginal; posterior pair largest, distinctly oval.

**Legs.** Basal femora I prolaterally with distinct lyra of radiating grooves and ridges set against small black spike at retrolateral corner of joint of trochanter and femora of palp. Ridges strongest and band divided on lower curvature of femur. Basifemoral thorns few, if any, on legs I-III, a

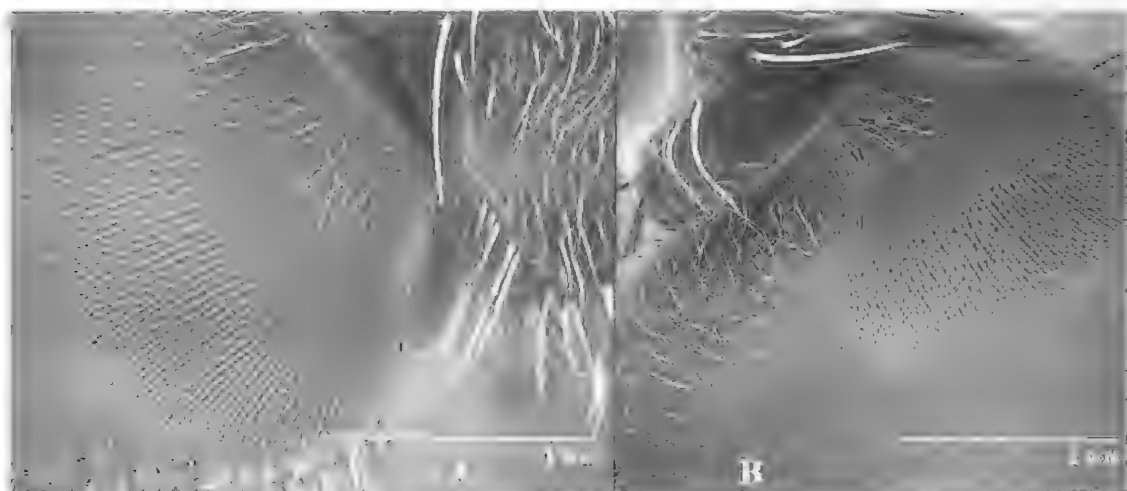


FIG. 163. Scanning Electron micrographs, *Tungari*, ♀, prolateral femur I. A, *T. mascordi*; B, *T. kenwayae*.

triangular cluster of c.20 on IV. Preening combs, each of 3 on retrolateral surface of III, IV.

	I	II	III	IV	Palp
Femur	4.96	5.20	4.08	6.24	3.68
Patella	3.44	3.68	3.36	3.60	2.16
Tibia	3.20	3.04	2.64	4.64	2.48
Metatarsus	2.48	2.32	3.20	5.84	-
Tarsus	1.68	1.60	1.76	1.76	2.00
Total	15.76	15.84	15.04	22.08	10.32

**Scopula.** Metatarsi: distal two thirds (I) or half (II) and divided by scattered setae; III, scattered cluster in distal 1/6th; IV, absent. Tarsi: I, II, full, divided by setal band of 3 wide; III, full, divided widely by band of 10-15 setae, as wide as scopula band; IV, like III but setal band wider than scopula.

**Spines.** I, fe p1, d6w, pa 0, ti 0, me v2 (1 proximal + 1 distal); II, fe p1, pa 0, ti p2, v3w, me v2; III, fe p1, r1, pa p2, r1, ti p2, r3, v7, me p4, r4, v7; IV, fe r1, ti r3, v8, me p6, r5, v11; palp, fe p1, pa v1, ti p1, v6.

**Claws.** 2-3 teeth (I) to none (IV); claws extend beyond tufts. One small tooth on palpal claw.

**Trichobothria.** Two rows, each of 9 for two-thirds of tibiae; c.13 in bowed row on metatarsi; 2 small clavate and 13 filiform on tarsi.

**Spermathecae.** Two low mounds each with outer stalk with terminal round lobe.

**Spinnerets.** PMS represented externally only by two low setose mounds. Basal, middle, apical, and total articles of PLS, 1.88, 1.00, 0.64, 3.52 long, respectively.

#### DISTRIBUTION, BURROW & HABITAT

Rainforests at Iron Range, Lamond Hill near Lockhardt River Mission, Cape York, NEQ. The

♂ was taken from alluvial rainforest at King Park Station, Iron Range. At Lamond Hill, the ♀ was taken in low rainforest on the crest. The burrow was a sinuous tube without sideshafts but with the end 2-3 times the diameter of the main tube. The burrow was set at an angle of c.30° off vertical and c.20-30 cm deep. It was set against the side of a rock and closed by a thin door incorporating leaves much bigger than the door into it.

#### REMARKS

*T. kenwayae* shares with *Zophorame* the rare condition of having a tooth on the palpal claw of ♀♀. The second leg is also longer than the first, rare in burrowing spiders but more common in fast moving diplurids.

#### *Tungari aurukun* sp. nov (Figs 161, 164, Table 12)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Aurukun Mission, 13°22'S 141°44'E, Archer R, Cape York, NEQ, Apr 1966, MV K2201.

#### DIAGNOSIS

Females differ from all other species of *Tungari* in having Y-shaped spermathecae and also from those of *T. kenwayae* in lacking teeth on the palpal claw and from *T. mascordi* in the shorter eye group.

PMS absent. Maxillae with c.16 cuspules. Ras-tellum a low indistinct mound. FEMALES. Lower face of femora I with stridulatory lyra. Inner ventral edges of coxae I, II sharp. Basifemoral thorns on I, II, IV. Spermathecae

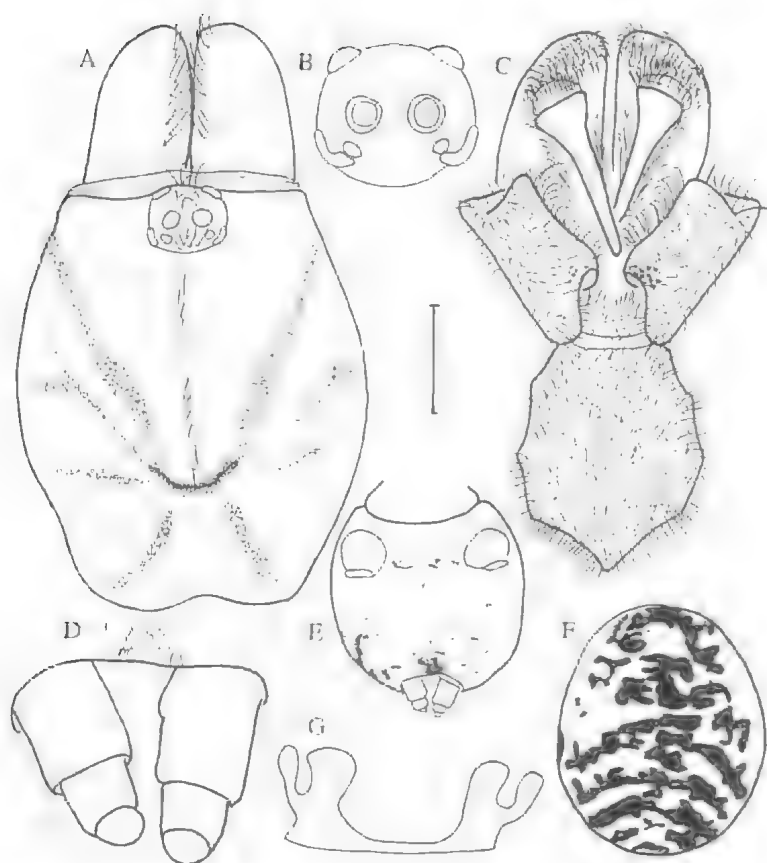


FIG. 164. *Tungari aurukun* sp. nov., holotype ♀ (MV K2201). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, chelicerae, sternum, maxillae & labium, ventral view; D, spinnerets, ventral view; E, F, abdomen, dorsal (F), ventral view (E); G, spermathecae. Scale line = 2mm (A, C); 4mm (E, F); 1mm (B, D); 0.5mm (G).

finer between ALE; short fine hairs, no bristles on lateral margins. Fovea broad, strongly procurved.

**Eyes.** Tubercle low but distinct, posterior and lateral slopes shallow, anterior slope strong. Group occupies 0.29 of head-width; front width, back width, length, 81:94:68, respectively. Back row straight. MOQ front width, back width, length, 60:65:37, respectively. AME:ALE:PME:PLE, 24:24:12:25. Eye interspaces: AME-AME,

two, each a pair of cactoid lobes of similar length, outer lobe slender, not apically enlarged, inner lobe broader. MALES. Unknown.

#### ETYMOLOGY

From the aboriginal name of the type locality.

#### DESCRIPTION

##### HOLOTYPE FEMALE MV K2201

Carapace 7.94 long, 6.69 wide. Abdomen 8.94 long, 7.50 wide. Total length, 19.

**Colour.** Carapace orange brown, chelicerae and legs darker, not annulated. Abdomen dorsally pallid with large irregular brown areas anteriorly, forming 5 irregular paired bands in posterior half; ventrally pallid with small brown area between spinnerets and few brown flecks elsewhere.

**Carapace.** Pilosity: light uniform pile of short fine hairs and few bristles; striae indistinct, narrow. Bristles: none thickened near posterior striae; 8-10 anteromedially; 6 long thick and few finer between PME, and 7 long thick and few

0.6; AME-ALE, 0.8; ALE-ALE, 1.6; PME-PLE, 0.1; PME-PME, 1.7; ALE-PLE, 1.2.

**Chelicerae.** Stout; few long brown and many short bristles prodorsally, laterally a narrow band of short bristles. Rastellum a low indistinct mound, many short curved strong bristles in distal triangle and overhang fang base. Furrow short, promargin with 8 stout teeth, medially a band of 10 moderately large teeth reach to c. half length of furrow, and c. 10 small teeth basomesally.

**Labium.** 1.38 wide, 0.81 long. Labiosternal suture narrow, continuous.

**Maxillae.** 2.06 long in front, 3.00 long behind, 1.38 wide; with 15-17 cuspules in inner angle. Heel strongly produced as narrow process; anterior lobe small, indistinct.

**Sternum.** 4.25 long, 3.44 wide. Sigilla posterior pair moderately large, oval, one length from margin; rest small, oval, marginal.

**Legs.** Inner edges of coxae acute. Basifemoral thorns on I, II (10-12 p, 2-4d); IV, 6d. 10 conical thorn spines on patella III, Preening combs ab-



sent. Legs very stout, broad, patellae almost flat dorsally. Small triangular area in proximal 1/5 of metatarsi I, II, rubbed bare dorsally; tarsi I-IV with proximal dorsal semi-ovate area delimited sharply by glabrous zone. Lower face of femora I with stridulatory ridges prolaterally.

	I	II	III	IV	Palp
Femur	3.94	3.94	3.75	4.81	3.31
Patella	3.19	3.00	2.81	3.25	2.31
Tibia	2.63	2.50	2.13	3.25	2.00
Metatarsus	1.81	1.94	2.63	3.88	-
Tarsus	1.31	1.25	1.25	1.44	1.63
Total	12.88	12.63	12.57	16.63	9.25

**Scopula.** Metatarsi: I, II, full (I) to distal half (II), broad, dense, entire save for few hairs; III, two small clusters in distal fifth; IV, absent. Tarsi: I, II, broad, full, dense, entire; III, IV, widely divided by setal band 12-15 (III), 15-20 (IV) wide.

**Spines.** I, fe p1, rest 0; II, fe p1, rest 0; III, fe 0, pa p10 thorns, ti p2, r3, v3, me p4, r4, v6; IV, fe 0, pa 0, ti r2, v5, me p1, r3, v7; palp, fe 0, pa 0, ti v8.

**Claws.** 1-2 small teeth (I) to none (IV) in medial rows; all legs claws similar size; palpal claw slightly smaller, bare.

**Trichobothria.** Two rows, each of 9 for half length of tibiae; c. 10 short in small triangular area on metatarsi in distal 1/5; c. 10-12 small filiform (none clavate) on tarsi.

**Spermathecae.** Two, each a pair of ectoid lobes of similar length, outer lobe slender, not apically enlarged, inner lobe broader.

**Spinnerets.** PMS entirely absent. PLS length of basal, middle, apical, and total articles 1.00, 0.28, 0.09, 1.37 long, respectively.

#### DISTRIBUTION & BURROW

Aurukun, Cape York Peninsula, NEQ. Judged by its stout legs and worn zones on the metatarsi, spiders occupy burrows with earthen walls.

#### *Tungari mascordi* sp. nov.

(Figs 4F, 14C, 16C, 17A, B, 20G, H, 160, 165, Table 12)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Horn Island, 10°37'S 142°17'E, Torres Strait, Q, 2-8 Dec. 1986, JAG, QMS8196.

#### DIAGNOSIS

Differs from *T. kemwayae* in that the ♀ palpal claw is edentate, femoral thorns are more numerous, the femoral lyra less extensive, and teeth basomesally on cheliceral furrow are larger, and from *T. monteithi* in the sharp inner edges of

coxae I, II. Also differs from *Ozicrypta clarki* in that maxillary cuspules number 25-40 (cf. 7).

PMS represented only by two very small huds. Maxillae with c.30 cuspules. Rastellum a small, strongly setose area. FEMALES. Inner ventral edges of coxae I, II sharp. Basifemoral thorns on all femora in triangular group of many short curved thorn setae, setae on prodorsal I, II, and retrodorsal III, IV, most on IV, numbering c.23. Spermathecae two, each a low ental mound with short straight lobe enlarged apically. MALES Unknown.

#### ETYMOLOGY

For Mr Ramon Mascord who died in October 1983, one of Australia's finest and most active amateur arachnologists and photographers. Ramon was an inspiration to many young aspiring naturalists and proved to be the only person to correctly recognize *Ixamatus* (Nemesiidae) from 1901 until 1981.

#### DESCRIPTION

##### HOLOTYPE FEMALE QMS8196

Carapace 7.52 long, 6.16 wide. Abdomen 7.44 long, 5.52 wide. Total length, 17.

**Colour.** Carapace yellow brown, chelicerae and legs orange brown; abdomen dorsally brown with pallid mottling forming fishbone pattern defined best posteriorly, ventrally mottled predominantly white, brown areas irregular.

**Carapace.** Bristles: light cover of fine wavy black hairs on interstitial ridges, short straight hairs on caput; 2-4 black along posterior striae; 10 thick anteromedially; four thick and several finer between PME, 5-7 long thick and some finer between ALE. Fovea deeply procurved.

**Eyes.** Tubercle distinct. Group occupies 0.33 of head width. Back row slightly recurved. Eye group front width, back width, length, 53:71:57. MOQ front width, back width, length, 36:46:30. AME:ALE:PME:PLE, 13:19:11:20. AME-AME, 0.8; AME-ALE, 1.4; ALE-ALE, 1.7; PME-PLE, 0.5; PME-PME, 2.2; ALE-PLE, 1.9.

**Chelicerae.** Stout, rounded, with few long black bristles and many shorter prodorsally in narrow band; few short bristles in lateral band; posterior margins with long hairs and long crescent of hirsute cuticle below carapace above coxae IV. Rastellum a small strongly setose area. Furrow promargin with 1 small distal and 7 large grouped teeth, basomesally with c.15 teeth, noticeably bigger than usual for area.

**Labium.** 1.12 wide, 0.72 long; long strong setae over entire surface, thickest on leading edge.

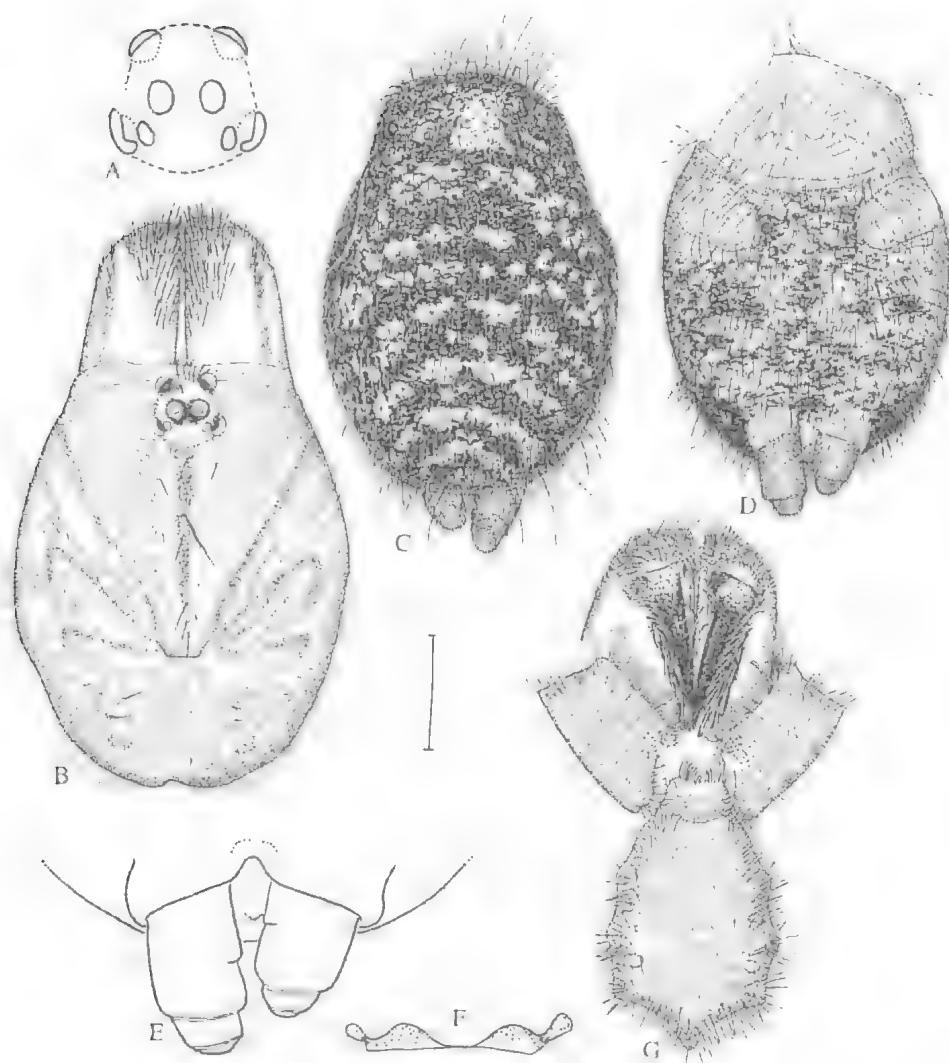


FIG. 165. *Tungari mascardi* sp. nov., holotype ♀ (QMS8196). A, eyes, dorsal view; B, carapace & chelicerae, dorsal view; C, D, abdomen, dorsal (C), ventral view (D); E, spinnerets, ventral view; F, spermathecae; G, sternum, maxillae, labium & chelicerae, ventral view. Scale line = 2mm (B-D, G); 1mm (A, E); 0.5mm (F)

Labiosternal suture is two mounded sigilla in shallow continuous depression.

**Maxillae.** 2.08 long in front, 2.88 long behind, 1.28 wide; with c.26-38 cuspules clustered in inner angle, not on mound. Heel produced, almost pointed; anterior lobe small distinct.

**Sternum.** 4.08 long, 3.04 wide; margins hirsute. Sigilla all distinct, oval; anterior and middle pairs touching margin, posterior pair separated from margin by half their length.

**Legs.** Inner ventral edges of coxae I, II sharp. Basifemoral thorns on of all femora with triangular group of many short curved thorn setae, setae on prodorsal I, II, and retrodorsal III, IV, most on IV, numbering c.23. Prolateral lower surface of femora I with rectangular region, length running diagonally, highest distally, of transverse stridulatory ridges presumably strummed by joint of trochanter and femora on retrolateral face of palp. Legs generally with many strong long and short straight setae.

	I	II	III	IV	Palp
Femur	3.28	3.92	3.76	4.88	3.76
Patella	2.96	2.80	2.72	3.12	2.16
Tibia	2.72	2.40	2.24	3.52	2.00
Metatarsus	2.24	2.32	3.04	4.56	-
Tarsus	1.36	1.36	1.28	1.68	1.82
Total	12.56	12.80	13.04	17.76	9.76

**Scopula.** Metatarsi: I, II, full, entire but for few scattered setae; III, only few hairs in two distal clusters; IV, absent. Tarsi: full, dense, divided by few scattered setae (I) or narrow setal band (II); III, full, dense, setal band wider than scopula bands on each side; IV, thin, narrower than setal bands. Many thorn, straight, spine-like setae on prodorsal patellae III, IV; femora III, IV with comb of strong setae on distal prolateral face. Preening combs: 1 each of 2-3 on retroventral III, IV.

**Spines.** I, fe p1, d4w, pa 0, ti v2w, me v1 distal; II, fe p1, d5w, pa 0, ti p2, v2w, me v2 distal and proximal; III, fe (all weak) p1, d1, r2, pa p6 + 30-40 thorn setae, r1, ti p2, r3, v7, me p4, r4, v9; IV, fe d3w, r1, pa 0, ti r3, v9, me p4, r4, v11; palp, fe 1, pa v1, ti p1 v9.

**Claws.** 2 small teeth on claws of leg I, none on leg IV or palpal claw; palpal claw c.2/3 height of tufts.

**Trichobothria.** Two rows, each of c.10 for 0.7 of tibiae; c.6-8 in distal group with c.10 in strongly bowed (to retrolateral face) row on metatarsi; 1-2 short clavate and 3 bands of c.30 filiform on tarsi.

**Spermathecae.** Two, each a low ental mound with short straight lobe enlarged apically.

**Spinnerets.** PMS represented only by two very small buds slightly darker than surrounding cuticle on inwardly sloping faces of PLS. Basal, middle, apical, and total articles of PLS, 1.00, 0.43, 0.15, 1.58 long, respectively.

#### DISTRIBUTION & HABITAT

Horn Island, just off the tip of Cape York, NEQ. The forest was sclerophyll with some undergrowth.

#### REMARKS

The leg formula (4321) is very rare in Australian barychelid ♀♀, also being found in *Synothele voldeu*, and indicates a more active mode of living (see Morphology).

#### SYMPATRIC MYGALOMORPHS

*Zophorame gallonae* Raven, *Moruga fuliginea* (Thorell) (Barychelidae); *Conothele* sp. (Ctenizidae); *Coremiocnemis* sp. (Theraphosidae).

#### *Tungari monteithi* sp. nov. (Figs 160, 166, Table 12)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Gunshot Ck, Cape York Peninsula, NEQ, 11°42'S 143°17'E, 12-15 Jul 1975, GBM, QMS8198.

#### DIAGNOSIS

Females differ from those of *T. kenwayae* in the more numerous cuspules on maxillae and basifemoral thorns on anterior legs and more extensive row of cheliceral teeth and from *T. mascordi* in the dense group of conical thorns on patellae and tibiae III.

PMS represented externally only by two low setose mounds. Maxillae with c.30-40 cuspules. Rastellum is low mound covered with many (20-30) short curved but thin spine-like bristles. FEMALES. Basal femora I with distinct lyra of radiating grooves and ridges. Basifemoral thorns on I, II, IV. Preening combs absent. Prolateral face of patellae and tibiae III and patellae IV with dense cover of short low coniform setae. Spermathecae two low mounds each with an outer stalk that has a terminal round lobe. MALES. Unknown.

#### ETYMOLOGY

For Dr Geoffrey B. Monteith, Senior Curator (Lower Entomology), Queensland Museum, in recognition of his fine collecting — no less than 31 new species of barychelids described here and by Raven & Churchill (1991).

#### DESCRIPTION

##### HOLOTYPE FEMALE QMS8198

Carapace 12.40 long, 10.10 wide. Abdomen 16.90 long, 11.90 wide. Total length, 34.

**Colour.** Carapace, chelicerae, and legs red brown. Abdomen dorsally (cuticle separated) brown with 4 pairs of diagonal pallid bands forming herringbone pattern; ventrally pallid.

**Carapace.** Uniform cover of fine black hairs on caput. Bristles: c.10 thick and several finer anteromedially and more smaller bristles just behind eye group; 7 thick and few finer between ALE; 6 long and few smaller between PME. Striae shallow, glabrous. Hirsute cuticular shelf between carapace above coxa IV, and hirsute area with small sclerotised ovoid area in front on eye group on joint. Light fringe of hairs on margins. Fovea wide, deeply procurved to U-shaped.

**Eyes.** Tubercle well defined in front and behind. Group occupies 0.23 of head-width; front width, back width, length, 50, 65, 48, respective-

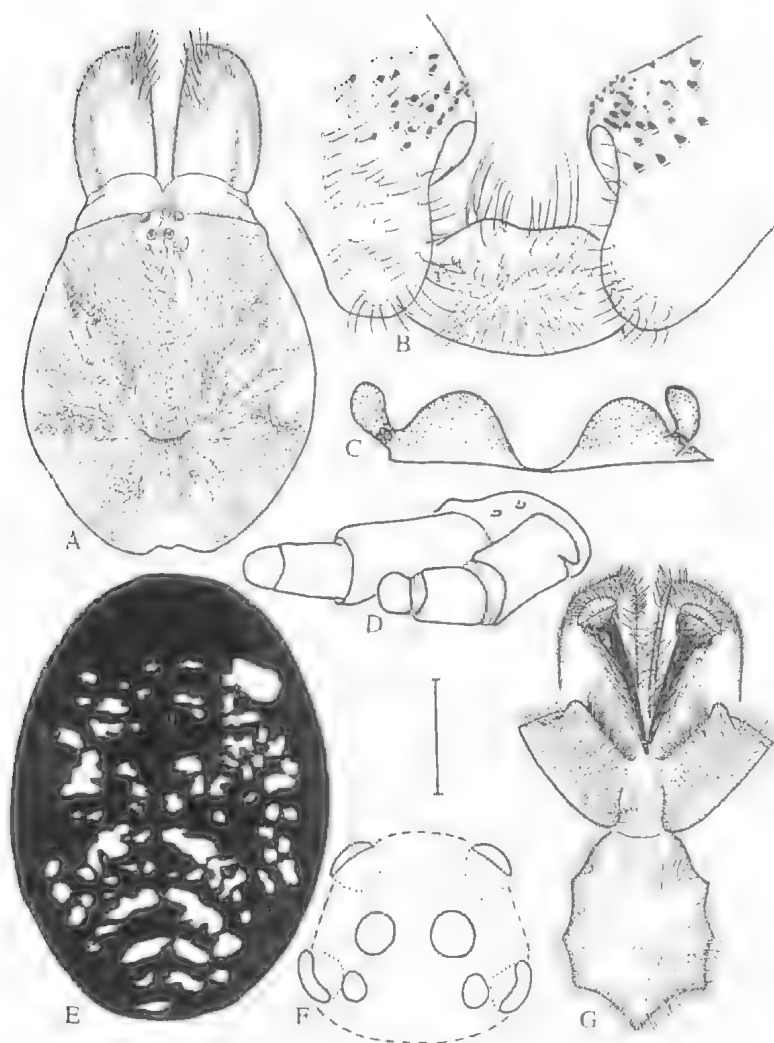


FIG. 166. *Tungari monteithi* sp. nov., holotype ♀ (QMS8198). A, carapace & chelicerae, dorsal view; B, maxillae & labium, ventral view; C, spermathecae; D, spinnerets, ventral view; E, abdomen, dorsal view; F, eyes, dorsal view; G, sternum, maxillae, labium & chelicerae, ventral view. Scale line = 4mm (A, E, G); 2mm (D); 1mm (B, F); 0.5mm (C).

**Maxillae.** 3.50 long in front, 5.13 long behind, 2.19 wide; with c.30-40 cusps, most clustered in inner angle, 10-12 scattered in behind them. Heel distinctly produced; anterior lobe small pointed, distinct.

**Sternum.** 7.00 long, 5.19 wide. Sigilla all distinct, marginal; posterior pair largest, distinctly oval.

**Legs.** Basal femora I prolaterally with distinct small lyra of radiating grooves and ridges on lower face. Basifemoral thorns on I (10-12), II (4-6), and IV (20-30). Preening combs absent.

ly. Back row procurved. PLE oval from above. MOQ front width, back width, length, 35, 42, 24, respectively. AME:ALE:PME:PLE, 12:13:9:16. Eye interspaces: AME-AME, 0.8; AME-ALE, 1.3; ALE-PLE, 1.9; PME-PME, 2.3; PME-PLE, 0.3; ALE-ALE, 2.5.

**Chelicerae.** Long, rounded with prodorsal band of many short and few long curved black bristles, laterally covered with very short bristles. Rastellum is low mound with many (20-30) short curved but thin spine-like bristles across and up chelicerae. Furrow promargin with 9 large teeth, basomesally with 9 small teeth reaching to half length of short furrow and 10-15 granules basally.

**Labium.** 1.19 long, 1.94 wide; labiosternal suture shallow, continuous.

Prolateral face of patellae and tibiae III and patellae IV with dense uniform cover of short low-coniform setae as well as setation like other articles

	I	II	III	IV	Palp
Femur	6.69	6.69	6.19	8.19	5.31
Patella	5.06	5.00	4.75	5.38	3.75
Tibia	4.63	4.38	3.88	6.00	3.44
Metatarsus	3.31	3.44	4.75	7.50	-
Tarsus	2.00	1.88	1.75	2.19	2.94
Total	21.69	21.39	21.32	29.26	15.44

**Scopula.** Metatarsi; entire, full (I) or distal two-thirds; III, IV, absent. Tarsi: I, II, full, entire, dense; III, full, divided widely by band of 10-15 setae, as wide as scopula band; IV, like III but setal band wider than scopula.

**Spines.** I, fe p1, d5w, pa 0, ti 0, me v1 distal; II, fe p1, d1, pa 0, ti p1, v3w, me v1 distal; III, fe d3w, r2w, pa p2 short, ti r2, v7, me p3, r4, v9; IV, fe d4w, r1w, pa 0, ti r3, v6, me p3, r4, v10; palp, fe p1, d3w, pa 0, ti p4, v7.

**Claws.** 1-2 teeth (I), none on (IV). Claws extend beyond moderately large tufts; palpal claw large, bare.

**Trichobothria.** Two rows, each of c.9 for 1/2 of tibiae; c.15-20 in distal cluster and short (2/3 length of segment) row curving to retrolateral face by distal 1/4 on metatarsi; c.4-6 small clavate and c.16 filiform on tarsi.

**Spermathecae.** Two low mounds each with outer stalk with terminal round lobe.

**Spinnerets.** PMS evident externally only by two low setose mounds. Basal, middle, apical, total segments of PLS, 2.34, 0.84, 0.56, 3.74 long, respectively.

#### DISTRIBUTION & HABITAT

Closed riverine forest at Gunshot Creek, Cape York, NEQ.

#### *Zophorame* Raven, 1990

*Zophorame* Raven, 1990, p. 49; Platnick, 1993, p. 99.

#### TYPE SPECIES

*Zophorame simoni* Raven, 1990, by original designation.

#### DIAGNOSIS

Differs from *Trittame* in having cuspules on the labium and teeth on the ♀ palpal claw.

PMS absent. Thorn spines on femora and patellae III, IV. Maxillae with 100 or more cuspules in broad triangular area sometimes extending for length of maxilla or curving around inner edge of maxillae; heel and anterior lobes rounded. Cuspule microstructure: c.20-30µm in maximum diameter; intercrest distance, c.0.75µm apart; profile, bilaterally uniform balloon; ridge direction, continuous over smooth crest, like thumbprints; cuspule interspace, about 1 diameter. Labium wider than long, with 10 or more cuspules in ♀♀, few to none in ♂♂. Carapace lightly hirsute. Chelicerae with strong rastellum of many short stout spines set on raised mound. Fovea procurved. Eyes on tubercle, in three rows; eye group long; clypeus

absent. Lyra and serrula absent. Trichobothria in slightly curving line on metatarsi, irregular line or band on tarsi; some trichae very long. Tarsal organ distal. Preening combs present. Legs not banded. Thorn spines present. Cluster of small conical spines retrodistally on tibiae III. FEMALE. Spermathecae with two entire or one divided or undivided receptaculum on each side. Sternum wide, cordate with three pairs of oval sigilla. All legs noticeably slender. Basifemoral thorns present (*Z. covacevichae*) or absent. Scopula hairs, very short, sparse, divided on all tarsi, dividing setal band wider on tarsi IV than on I; absent on metatarsi IV; confined to lower 90° of tarsi I, II. Paired claws with one row of few, small teeth or bare; all teeth resemble lamellae; palpal claw dentate. Palp: claw tufts present; claw slightly smaller than claw tufts. Claw tufts small, most hairs extend upward, distal extent of tufts noticeably small. MALES (*Z. gallonae*). Teeth only on one face of claws. Tibia I with broad conical spur distally, with short thick megaspine apically; prolateral face with distinct thumb-like microspur set against broad sinuous megaspine. Bulb large, distal portion broad with two large spirals; embolus short pointed; retrolateral face of cymbium concave; cymbial lobes subequal but truncate. Intercheliceral tumescence absent.

#### INCLUDED SPECIES

*Zophorame covacevichae* sp. nov.  
*Zophorame gallonae* Raven, 1990  
*Zophorame hirsti* sp. nov.  
*Zophorame simoni* Raven, 1990

#### DISTRIBUTION & HABITAT

*Zophorame* occurs in the Torres Strait Islands, the Windsor Tableland, Mt Cook, near Tinaroo Dam, Atherton Tableland, and at Forty Mile Scrub National Park, all in northeastern Queensland. A juvenile of unknown species was also taken at the Claudie River, Iron Range, Cape York Peninsula, Queensland. *Z. simoni* was found in coastal rainforest; *Z. gallonae*, in moist areas of open eucalypt forest; and *Z. covacevichae*, in semi-evergreen thicket.

## KEY TO ZOPHORAME ♀♀

1. Less than 20 (4-10) cuspules on labium; tibia III with group of distinct spines retrodistally (Fig. 168C) . . . . . 2  
At least 30 cuspules (usually c.40) on labium; tibiae III with group of small spines dorsodistally . . . . . *Z. gallonae*
- 2(1). Basifemoral thorn setae on I, II, IV; abdominal venter entirely pallid . . . . . *Z. covacevichae*  
Basifemoral thorn setae absent; abdominal venter pallid with brown markings. . . . . 3
- 3(2). Maxillary cuspules reach to tip of anterior lobe (Fig. 170C) . . . . . *Z. hirsti*  
Maxillary cuspules reach only to base of anterior lobe . . . . . *Z. simoni*

***Zophorame covacevichae* sp. nov.**  
(Figs 6D, 8C, D, 167, 168. Tables 13)

## MATERIAL EXAMINED

TYPE. Holotype ♀, 40 Mile Scrub, SW Mt Garnet, 18°05'S 144°51'E, NEQ, 10-14 Apr 1978, RR, VTD, QMS19110.

## DIAGNOSIS

Similar to *Z. cooki* in the size of the rastellum and differs in having a spine cluster on distal edge of retrolateral tibia III and from *Z. hirsti* in having basifemoral thorns and an entirely pallid venter.

Maxillary cuspules extend to base of anterior lobe. Rastellum a strongly produced mound with 3 conical spines and 4-6 more basally. FEMALES. Palpal claw of ♀♀ with 3 teeth. Labium with c.12 cuspules. Basifemoral thorns distinct on I, II, IV. Retrodistally on tibiae III with line of 4 strong and 4-6 smaller spines. Scopula on metatarsi I, II in two small clusters in distal 1/3. MALES. Unknown.

## ETYMOLOGY

For Ms Jeanette Covacevich, Senior Curator (Vertebrates), Queensland Museum, in small recognition of her contribution to natural history.

## DESCRIPTION

## HOLOTYPE FEMALE QMS19110

Carapace 4.40 long, 3.20 wide. Abdomen 4.80 long, 2.88 wide. Total length, 10.

**Colour.** Carapace and legs yellow brown, not banded, chelicerae orange brown. Abdomen dorsally brown with anterior pallid domed area and posteriorly with four irregular pairs of pallid recurved bands; ventrally entirely pallid.



FIG. 167. Records of *Zophorame* in Cape York Peninsula, Q, with catchment boundaries (dotted lines).

**Carapace.** Anterior left corner damaged. Pilosity: light pile of fine brown hairs; striae indistinct, narrow. Bristles: no erect black beside posterior striae; 7 long erect anteromedially, none in band beside caput; c.5 long thick and few finer between PME, and 3 long thick and few finer between ALE; 3 long thick in front of ALE on clypeal edge; few long hairs on lateral margins. Fovea broad, shallow, transverse, slightly procurved.

**Eyes.** Tubercle low, distinct. Group occupies 0.23 of head-width; front width, back width, length, 21, 32, 32, respectively. Back row slightly recurved. MOQ front width, back width, length, 21, 22, 17, respectively. AME:ALE:PME:PLE, 8:10:6:6. Eye interspaces: AME-AME, 0.6; AME-ALE, 1.0; ALE-PLE, 2.1; PME-PME, 1.6; PME-PLE, 0; ALE-ALE, 0.8.

**Chelicerae.** Narrow band of short brown bristles prodorsally, laterally almost glabrous. Rastellum a strongly produced mound armed apically with 3 short strong conical spines and 4-6 more basally, above those along inner edge and retrolaterally a narrow band of long strong conical spines up dorsal face. Furrow promargin with 8 small spaced teeth, basomesally with 6 smaller teeth and 12-18 fine granules.

**Labium.** 0.45 long, 0.93 wide; with 12 blunt cuspules, fine setae uniformly over surface. Labiosternal suture a narrow groove.

	<i>covacevichae</i>	<i>galloniae</i>	<i>hirsti</i>	<i>simoni</i>
♀ Basifemoral thorns	I, II, IV	absent	absent	absent
No. Labial cuspules	12	40	9	9
Scopula metatarsi III(IV)	>>absent	1/3(1/2)	absent	absent
Preening combs III(IV)	IV only	III only	present	present
Habitat	vine thicket	rainforest	open woodland	rainforest
Distribution	40 Mile Scrub, NEQ	Horn & Thursday I. Torres St	Tinaroo Dam, NEQ	Mt Cook, NEQ

Table 13. *Zophorame* species, only females.

**Maxillae.** 1.43 long in front, 1.45 long behind, 0.88 wide; with c.100 or more cuspules densely grouped in inner corner and spread along maxillae in broad triangle reaching base of anterior lobe, cuspules not on mound. Heel squared; anterior lobe small, indistinct.

**Sternum.** 2.55 long, 2.05 wide; broad, domed. Sigilla: posterior pair oval, slightly raised, others small, indistinct.

	I	II	III	IV	Palp
Femur	2.84	2.44	2.00	2.96	1.80
Patella	1.76	1.60	1.36	1.80	1.08
Tibia	2.08	1.68	1.24	2.80	1.20
Metatarsus	1.48	1.52	1.48	2.60	-
Tarsus	1.48	1.32	1.00	1.24	1.08
Total	9.64	8.56	7.08	11.40	5.16

**Legs.** 3-5 basifemoral thorns on I, II, IV. Thorn spines in two clusters on both femora III, IV and patellae III: a group of 3 strong in short comb prolaterally in distal edge of femora with cluster of 8 (III) to 6 (IV) on prodorsal corner distally; and line of 3 strong conical prolaterally on patellae with basal cluster of smaller spines prodorsally. Thorn spines also retrodistally in tibiae III with line of 4 strong and 4-6 smaller spines. Preening combs: I of 4 strong curved setae on retroventral IV.

**Scopula.** Metatarsi: I-III, absent save for two small clusters in distal 1/2-1/3 (III); IV, two small sparse clusters. Tarsi I-IV, sparse, widely divided by setal band 6-10 wide and wider than scopula.

**Spines.** I: fe d4w, pa 0, ti v2w, me v1 basal, II: fe d5w, pa 0, ti v2w, me v1 basal + 3w. III: fe prolaterally and dorsally thorns, d1w, r1w, pa p3 thorns, ti r1 + thorns (above), v5w, me p1, r4, v5. IV: fe prolaterally and dorsally thorns, pa 0, ti r2, v5, me r4, v8. Palp: fe d1w, pa 0, ti 0.

**Claws.** All slightly smaller than tufts but visible from above; tufts small separate; 1 long tooth medially (?) on I, or bare (IV); palpal claw small with 3 small teeth.

**Trichobothria.** Two rows, each of 7 for length of tibiae; c.11 on metatarsi in curving row; c.2 small clavate and c.10 filiform on tarsi.

**Spermathecae.** Two, each a broad low dome with small thumb-like lobe arising medially from it.

**Spinnerets.** PMS absent. Basal, middle, apical, total segments of PLS, 0.63, 0.33, 0.05, 1.01 long, respectively.

#### DISTRIBUTION, BURROW & HABITAT

From Forty Mile Scrub National Park, SW of Mt Garnet, NEQ; the forest is a semi-evergreen vine thicket with average canopy height c.3-5 metres. The type was found in a burrow with a wafer thin door incorporating a dirty leaf.

The burrow entrance is open and sparsely lined with silk. The burrow extends vertically c.10cm; c.4-6cm below the entrance an unusually small (about half the diameter of the burrow entrance), dorsally hinged door marks the beginning of a horizontal side shaft. The side shaft is flask-shaped, c.4-5cm long, and near its end is about 4-5 times the diameter of the door.

#### MYGALOMORPHS SYMPATRIC

*Aname pullida* Koch (Nemesiidae); *Oziocrypta combeni* sp. nov., *Idiomnata* sp. (Barychelidae).

#### *Zophorame galloniae* Raven, 1990 (Figs 167, 169, Table 13)

*Zophorame galloniae* Raven, 1990, p. 51; Platnick, 1993, p. 99.

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Horn Is., Torres Strait, 10°37'S 142°17'E, NEQ, in burrow under log with young, 2-8 Dec 1986, JAG, QMS1632.

#### OTHER MATERIAL EXAMINED

4 ♂♂, Thursday Is., E of dam, 10°35'S 142°13'E, Torres Strait, 30 Mar-15 Jun 1991, R. Coles, QMS19051-19054.

#### DIAGNOSIS

Females differ from those of *Z. simoni* by the wide sternum, the more numerous labial cuspules and the less distinct rastellar mound. They differ from ♀♀ of all other known species by having several small of spines dorsodistally, rather than retrodistally, on tibiae III.



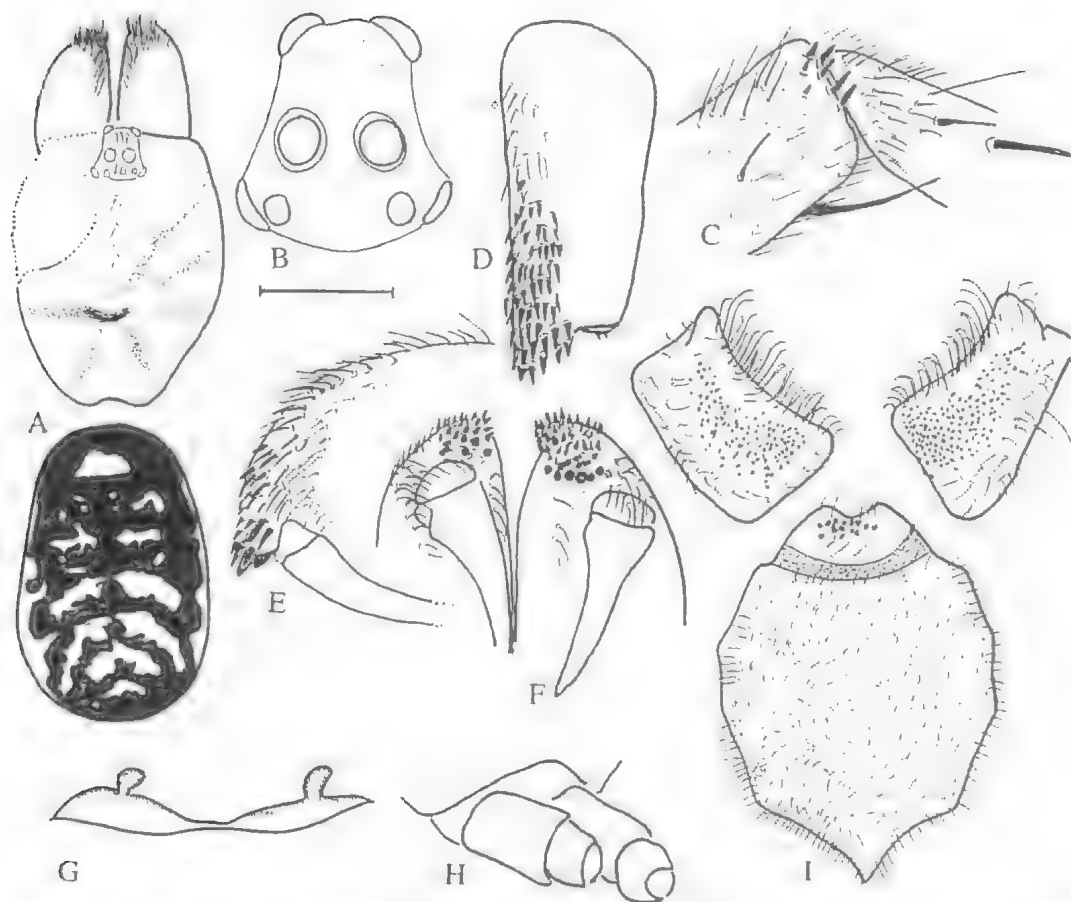


FIG. 168. *Zophorame covacevichae* sp. nov., holotype ♀ (QMS19110). A, carapace, chelicerae & abdomen, dorsal view; B, eyes, dorsal view; C, tibia & metatarsus III, retrolateral view; D-F, dorsal left chelicerae showing rastellum & spines, frontal (D), retrolateral (E), ventral views (F); G, spermathecae; H, spinnerets, ventral view; I, sternum, maxillae & labium, ventral view. Scale line = 2mm (A); 0.5mm (B, C); 1mm (D-F, H, I); 0.25 (G)

Rastellum a low strongly spinose mound. FEMALE. Labium with c.40 cuspules. Maxillary cuspules extend to tip of anterior lobe as curved hooks. Basifemoral thorns absent. Palpal claws with 4 teeth. Spermathecae two short separated bulbous lobes arising from one broad atrium. Group of 10-12 small spines dorsodistally on tibiae III. Scopula on metatarsi I, II in two small distal clusters. MALES. Cuspules few or absent on labium. Claws only on one face of claws. Tibia I with broad conical spur distally, with short thick megaspine apically; prolateral face with distinct thumb-like microspur set against broad sinuous megaspine. Bulb large, distal portion broad with two large spirals; embolus short pointed; retrolateral face of cymbium concave; cymbial lobes subequal but truncate.

#### DESCRIPTION

##### MALE QMS19051

Carapace 4.31 long, 3.38 wide. Abdomen 4.25 long, 2.38 wide. Total length, 10.

**Colour.** Carapace yellow brown, caput darker, chelicerae orange brown, anteriorly redbrown, legs yellow brown, not annulated. Abdomen dorsally and ventrally yellow brown, without pattern.

**Carapace.** Pilosity: uniform cover of short black bristles and fine golden hairs; only anterior striae distinct, all narrow. Bristles: none erect black beside posterior striae; 18-20 short posteriorly directed anteromedially and many short in band beside caput; 6-10 thick between PME, and 5 long thick and few finer between ALE; light pile of short golden hairs and thick

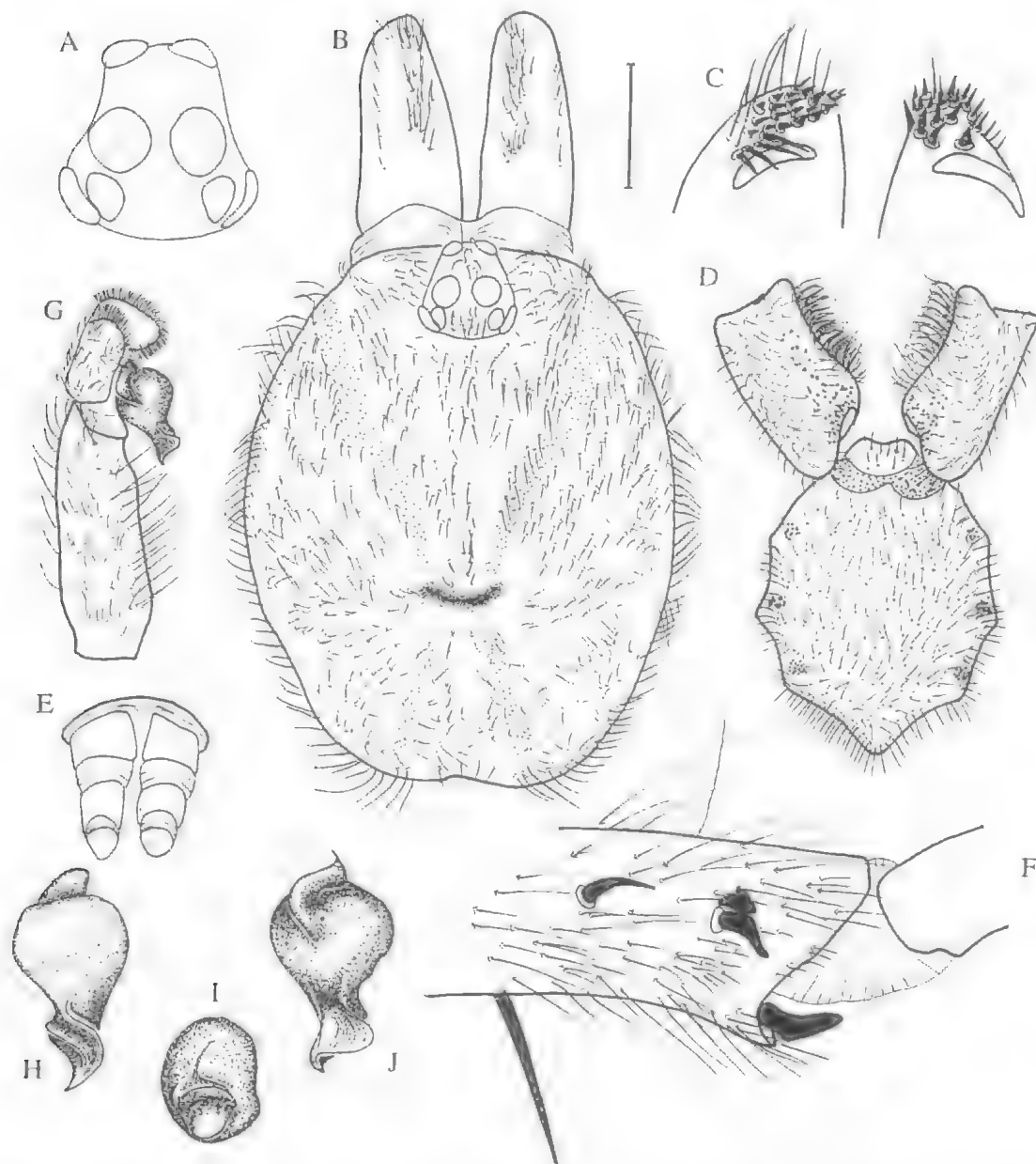


FIG. 169. *Zophorame gallonae* Raven, ♂ (QMS19051). A, eyes, dorsal view; B, carapace & chelicerae, dorsal view; C, apical chelicerae with rastellum, ventral view; D, sternum, maxillae & labium, ventral view; E, spinnerets, ventral view; F, tibia & metatarsus I, prolateral view; G, cymbium & palpal bulb, dorsal view; H-J, palpal bulb, ventral (H), axial (I) & retrolateral views (J). Scale line = 1mm (B, D, E, G); 0.5mm (A, C, F, H-J).

black bristles on lateral margins. Fovea wide, distinctly procurved.

**Eyes.** Tubercle distinct. Group occupies 0.25 of head-width; front width, back width, length, 30:50:47, respectively. Back row slightly

procurved. MOQ front width, back width, length, 35:38:29. AME:ALE:PME:PLE, 17:13:13:17. Eye interspaces: AME-AME, 0.3; AME-ALE, 0.7; ALE-ALE, 0.4; PME-PLE, 0; PME-PME, 1.2; ALE-PLE 1.5.

**Chelicerae.** Narrow band of black bristles and long golden hairs prodorsally, laterally a narrow band of short setae and fine hairs. Rastellum a small but distinct mound on inner edge with 8-10 short strong conical setae. Intercheliceral tumescence absent. Furrow promargin with 10 small teeth, basomesally with no teeth evident.

**Labium.** 0.72 wide, 0.34 long. One cuspule. Labiosternal suture two sigilla joined medially.

**Maxillae.** 1.19 long in front, 1.59 long behind, 0.72 wide; with c.70 cuspules in from inner angle ectally for three-quarters of maxilla. Heel broad, produced; anterior lobe indistinct.

**Sternum.** 2.34 long, 1.97 wide. Sigilla all small, oval, marginal.

	I	II	III	IV	Palp
Femur	3.69	3.28	3.03	3.69	2.34
Patella	2.19	1.97	1.56	2.13	1.34
Tibia	2.88	2.59	2.25	4.19	1.94
Metatarsus	2.66	2.28	2.72	4.50	-
Tarsus	1.97	1.66	1.47	2.09	0.88
Total	13.39	11.78	11.03	16.60	6.50

**Legs.** Tibia I with broad conical spur distally, with short thick megaspine apically; prolateral face with distinct thumb-like microspur set against broad sinuous megaspine. Thorn spines on prolateral corner of patellae III (c.14) and IV (c.17). Preening combs: 1 of 4 weak setae on retroventral III only.

**Scopula.** Not continuous with claw tufts; hairs very short; on lower 160-180° of tarsi I. Metatarsi, longer on prolateral face: I, II, thin, entire, distal 1/2 (I)-1/3 (II), hairs short, surface not pallid; III, two narrow bands in distal half, thin; IV, one prolateral band in distal third, thin. Tarsi: I, II, hairs short, moderately dense but cuticle visible, full, entire; III, hairs longer, divided by narrow setal band only in distal 1/5; IV, two narrow bands, full length divided by setal band 8-10 wide.

**Spines.** I: fe p1, d5, pa 0, ti p3 + megaspine, v5 + megaspine, me p2 long, v2. II: fe p1, d5, pa 0, ti p2, v6, me p3 long, v2. III: fe d3, r3, pa v1, ti p2, d1, r2, v8, me p2, r3, v8. IV: fe d3, r2, pa v1, ti p4, d1, r3, v9, me p5, r3, v9. Palp: fe d2, pa 0, ti d1, v2.

**Claws.** 3-4 (I) and 1-2 (IV) long teeth in one row only on outer faces. Tufts of I about 3/4 size on IV; claws on I c.1/2-2/3 size of those on IV.

**Trichobothria.** Two rows, each of c.6 for 3/4 of tibiae; c.8 on metatarsi in curving row; c.10 filiform on tarsi, no clavates evident.

**Palp.** Bulb large, distal portion broad with two large spirals; embolus short pointed; retrolateral face of cymbium concave; cymbial lobes subequal but truncate.

**Spinnerets.** PMS absent. PLS length of basal, middle, apical, and total articles 0.53, 0.25, 0.22, 1.00 long, respectively.

#### DISTRIBUTION & HABITAT

From open eucalypt forest on Horn and Thursday Islands, Torres Strait.

#### REMARKS

This is the first description of the ♂ of the genus.

#### MYGALOMORPHS SYMPATRIC

*Moruga fuliginea* (Thorell) (Barychelidae); *Phlogiellus* sp. and *Selenocosmia* sp. (Theraphosidae); *Conothele* sp. (Ctenizidae).

***Zophorame hirsti* sp. nov.**  
(Figs 167, 170, Table 13)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Tinaroo Dam, Atherton Tableland, NEQ, 17°11'S 145°32'E, 23 Jun 1979, DH, SAMA N1992236.

#### DIAGNOSIS

Differs from *Z. covacevichae* in the greater number of extent of cuspules on the maxillae and lacking basifemoral thorns.

Rastellum a group of 10 strong conical spines on distinct, low mound. Maxillary cuspules (c.200) extend to anterior tip of anterior lobe. FEMALES. Palpal claw with 2 teeth, Labium with c.9 cuspules. Basifemoral thorns absent. Retrodistally on tibiae III with c.12 short spines and 2-3 small dorsally on adjacent metatarsi. Scopula on metatarsi I, II in distal 1/3. MALES. Unknown.

#### ETYMOLOGY

For Mr David B. Hirst, Arachnologist, South Australian Museum, in recognition of his active research on heteropodid spider taxonomy.

#### DESCRIPTION

HOLOTYPE FEMALE SAMA N1992236

Carapace 4.81 long, 3.94 wide. Abdomen 6.94 long, 4.25 wide. Total length, 14.

**Colour.** Carapace orange brown with brown trim along edges and brown areas peppered over thorax and on caput, chelicerae darker, legs yellow brown with brown femora I-IV and patellae and tibiae I, II boldly marked with longitudinal pallid oval areas dorsally, not annulated. Abdomen dorsally brown with c.30-40 small white spots and 3 paired larger areas posteriorly;

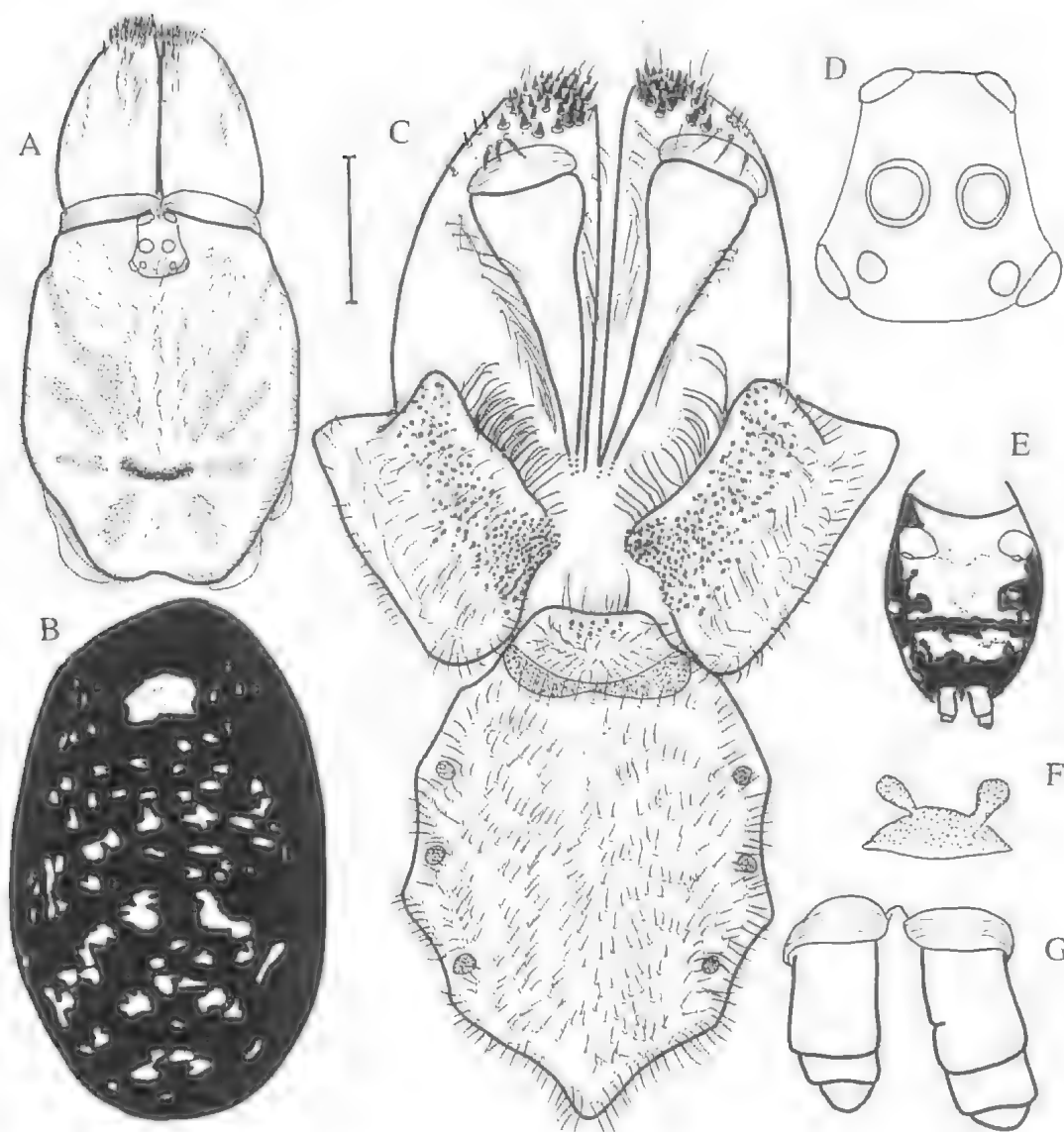


FIG. 170. *Zophorame hursti* sp. nov., holotype ♀ (SAMA N1992236). A, carapace & chelicerae, dorsal view; B, E, abdomen, dorsal (B), ventral view (E); C, sternum, maxillae, labium & chelicerae, ventral view; D, eyes, dorsal view; F, spermathecae; G, spinnerets, ventral view. Scale line = 2mm (A, B); 1mm (C, G); 0.5mm (D, F); 4mm (E).

ventrally pallid with brown around flanks, in front of spinnerets, and in a narrow transverse band in front of that.

**Carapace.** Pilosity: sparse cover of short fine black setae, not hirsute; striae shallow, indistinct, narrow. Bristles: none enlarged beside posterior striae; 11 long thick in two rows anteromedially for anterior half of caput, fine setae elsewhere; 4 long and few finer between PME, and 7 long thick

and few finer between ALE; sparse line of short setae on lateral margins. Fovea very broad, procurved.

**Eyes.** Tubercle low, distinct. Group occupies 0.21 of head-width. Back row recurved. Eye group front width, back width, length, 21, 34, 32, respectively. MOQ front width, back width, length, 21, 22, 18, respectively. AME:ALE: PME:PLE, 8:10:5:8. Eye interspaces: AME-

AME, 0.6; AME-ALE, 1.1; ALE-PLE, 2.5; PME-PME, 1.6; PME-PLE, 0.1; ALE-ALE, 1.0.

**Chelicerae.** Few long and many short black bristles in narrow band prodorsally, laterally a single line and few scattered setae. Rastellum a group of 10 short strong conical spines on distinct but low mound, aspinose on lower face; many short spines tightly packed in remaining inner corner and across inner half of edge of fang joint. Furrow promargin with 6 thick mixed with 3 smaller spaced teeth, basomesally with 7 small teeth and 10 granules in basal third.

**Labium.** 0.48 long, 1.20 wide; 9 blunt cuspules in anterior 1/3; 9 long curved setae behind that and 20-30 shorter setae over posterior half. Labiosternal suture narrow, shallow, continuous.

**Maxillae.** 1.60 long in front, 2.00 long behind, 1.08 wide; with c.200 cuspules in densely packed in inner angle, along heel edge and extend laterally onto tip of anterior lobe. Heel broadly produced; anterior lobe small, distinct.

**Sternum.** 3.12 long, 2.48 wide. Sigilla all small, oval, marginal.

**Legs.** Basifemoral thorns absent. Short conical thorn spines prodistal on femora III (15), IV (21), proximally on adjacent prolateral face of patellae III (19 small and 2-3 large), IV (c.20 small), c.12 short spines distally on retrolateral face of tibiae III, with 2-3 small dorsally on adjacent metatarsi. Preening combs; 1 strong of 4 long strong close setae on retroventral III, IV.

	I	II	III	IV	Palp
Femur	3.13	2.69	2.50	3.25	2.25
Patella	2.13	1.88	1.63	2.06	1.25
Tibia	2.31	1.88	1.56	3.13	1.31
Metatarsus	1.81	1.56	1.75	3.00	-
Tarsus	1.31	1.25	1.38	1.50	1.25
Total	10.69	9.26	8.82	12.94	6.06

**Scopula.** Metatarsi: I, II, in distal 1/3, sparse; III, IV, absent save for narrow band in distal 1/5 on prolateroventral edge. Tarsi: I, II, thin, full, widely divided by setal band 6-8 wide; III, IV, thin, even more widely divided by setal band 10-12 wide; widely divided on palp.

**Spines.** I: fe p1w, d4w, pa 0, ti v2w, me v1w. II: fe d5, pa 0, ti v5w, me v2w. III: fe d1w, r1w + thorns, pa p3 + small thorns, ti v6, me p1, r2, v7. IV: fe thorns, pa 0, ti r2, v7, me p2, r3, v9. Palp: fe 0, pa 0, ti p1, v6.

**Claws.** 1 small tooth on leg claws medially or claws bare; all claws small of similar size; tufts small; palpal claw slightly smaller than tufts, with 2 small teeth.

**Trichobothria.** Two rows, each of c.8 for 2/3 of tibiae; c.6 on metatarsi in curving row, distal hair very long; no clavate and c.12 filiform on tarsi.

**Spermathecae.** A broad domed atrium from which arises two short lobes.

**Spinnerets.** PMS absent. Basal, middle, apical, total segments of PLS, 1.00, 0.30, 0.05, 1.35 long, respectively.

#### DISTRIBUTION & HABITAT

From open forest downstream of the reservoir overflow of the Tinaroo Dam, Atherton Tableland, NEQ.

#### *Zophorame simoni* Raven, 1990 (Fig. 167, Table 13)

*Zophorame simoni* Raven, 1990, p. 50.

MATERIAL EXAMINED

Types. See Raven, 1990.

#### DIAGNOSIS

Rastellum with 4 large spines on distinct mound with 2 thick spines laterally, c.100 cuspules on maxillae extending to base of anterior lobe. FEMALES. Labium with c.9 cuspules. Group of c.20 spines retrodistally on tibiae III. Basifemoral thorns absent. Palpal claw with one small tooth. Dorsal abdomen with indistinct large pallid white spots. Paired claws of ♀♀ with one tooth. Spermathecae two short separated bulbous lobes arising from one broad atrium. MALES. Unknown.

#### DISTRIBUTION, BURROW & NATURAL HISTORY

*Z. simoni* is known only from mesophyll vine forest (rainforest) at Mt Cook National Park, and the Windsor Tableland, near Cape Tribulation, in NEQ.

In April 1990, *Z. simoni* was rare in banks and under rocks. The doors are small (1-1.5cm) concave inwards, the seal is distinct and the doors about 1-2mm thick and bottom-hinged. Just behind the door, the burrow enlarges to 2-3 times the door diameter for about 3-4cm. The burrow then constricts to about twice the door diameter and remains so for 3-4 cm. Finally, the burrow constricts again to about the door diameter or less for 4-6cm. The silk is thick and opaque near the door. A short side shaft with a door was found in one burrow. When disturbed, most spiders retreat to the back of the burrow; *Z. simoni* launches itself out of the burrow down the bank.

#### MYGALOMORPHS SYMPATRIC

*Mandjelia banksi* (Barychelidae); *Phlogiellus* sp. (Theraphosidae); *Conothele* sp. (Ctenizidae); *Cethegus pallipes* Raven (Dipluridae).

## THE NEW CALEDONIAN FAUNA

*Barycheloides* gen. nov.

## TYPE SPECIES

*Barycheloides alluviophilus* sp. nov.

## DIAGNOSIS

Differs from *Barychelus* in the plesiomorphic retention of posterior median spinnerets and having a long row of teeth mesally on the cheliceral furrow; most species have a very pronounced rastellum.

## DESCRIPTION

Large to medium-sized. FEMALES. Carapace ovate, lightly and uniformly hirsute; no enlarged setae in posterior stria region, no foveal bristles; anteromedial bristles enlarged; lateral margins hirsute, without enlarged bristles; caput long, arched low; anterior striae broad, other shallow, glabrous; fovea broad, transverse, procurved. Eye tubercle distinct, raised; clypeus absent; strong bristles between ALE and PME. Eye group about as wide behind as in front, and usually wider than long; anterior lateral eye interspace greater than ALE-PLE distance. Area of ovate cuticle in front of eye group. Chelicerae stout, broad; rastellum a large strong rounded spinose process on inner corner of chelicerae (most species) or a low spinose mound (*B. rouxi*); fangs strong smooth; single row of many strong teeth on cheliceral promargin; medially a line of smaller but strong teeth extends for full length of furrow, small cluster of granules and tiny teeth basally. Maxillae large with few cuspules on low inner corner; anterior lobe broad, indistinct; heel slightly produced. Cuspule microstructure: c.50µm in maximum diameter; intercrest distance, c.0.6µm apart; profile, stout, bilaterally uniform balloon; ridge direction, continuous over smooth crest, like thumbprints; cuspule interspace, 2 or more diameters. Labium large, wide, no cuspules; separated from sternum by broad glabrous groove including two elongate raised mounds. Sternum cordate, large; body of sternum (behind suture) longer than wide; posterior sigilla large, oval, remote from margin. Legs stout, spinose; basifemoral thorns, thorn spines, and preening combs present or absent. Scopula on metatarsi and tarsi of all legs, and tarsi of palp; on I, II, scopula extends for c.270° of metatarsal and tarsal diameters, tips of hair reaching almost as high as dorsal surface of leg article; scopula continuous with claw tufts; claw tufts large, irides-

cent green; scopula dense on I, II, more extensive on prolateral face of metatarsi I, II than retrolateral. Legs I, II as thick as III, IV. Leg tarsi with setose mound adjacent to metatarsal joint and surrounded by glabrous groove. Claws of all legs extend above claw tufts, of similar size; palpal claw much smaller, all with 1 row of medial teeth or bare. Trichobothria in two short basal rows on tibiae; long curving row (dorsal to retrolateral face basally) on metatarsi; tarsi with Vee shaped area of two bands of filiforms but group of clavates basally. Tarsal organ small, set close to distal edge of sclerotised cuticle on dorsal midline. Abdomen dorsally brown; ventrally brown; no mottling. Spermathecae two, each antennate domes with other lobe arising from dorsal surface. PMS large, barrel-shaped; PLS large with domed apical segment. MALES. Carapace strongly setose with strong bush of hairs on margin. Fovea short, procurved. Rastellum less prominent and spinose than ♀; intercheliceral tumescence absent. Scopula and claw tufts less extensive than in ♀♀. Tibial spur very low with small megaspine; microspur and megaspine absent. Claws: 1-2 rows of teeth or bare. Palpal bulb pyriform with twisted embolus with distal grooves.

## ETYMOLOGY

The stem is from its presumed sister group, *Barychelus*; the gender is masculine.

## REMARKS

The rastellum in *Barycheloides* differs from that of ctenizids in that it is not simply a process but a broad ridge beginning high on the cheliceral face and reaching down to the fang where it may form a conical process.

## INCLUDED SPECIES

*Barycheloides alluviophilus* sp. nov.  
*Barycheloides chiropterus* sp. nov.  
*Barycheloides concavus* sp. nov.  
*Barychelus rouxi* Berland, 1924  
*Barycheloides rufifemoralis* sp. nov.

## KEY TO BARYCHELOIDES

## FEMALES

1. Rastellum a raised conical process bearing short spines (Fig. 174C) . . . . . 2  
     Rastellum a low mound (Fig. 177H) . *B. rouxi*
- 2(1). No thorn spines on femora, patellae III, IV . . . . . 3  
     Thorn spines distinct on femora and patellae III, IV . . . . . 4

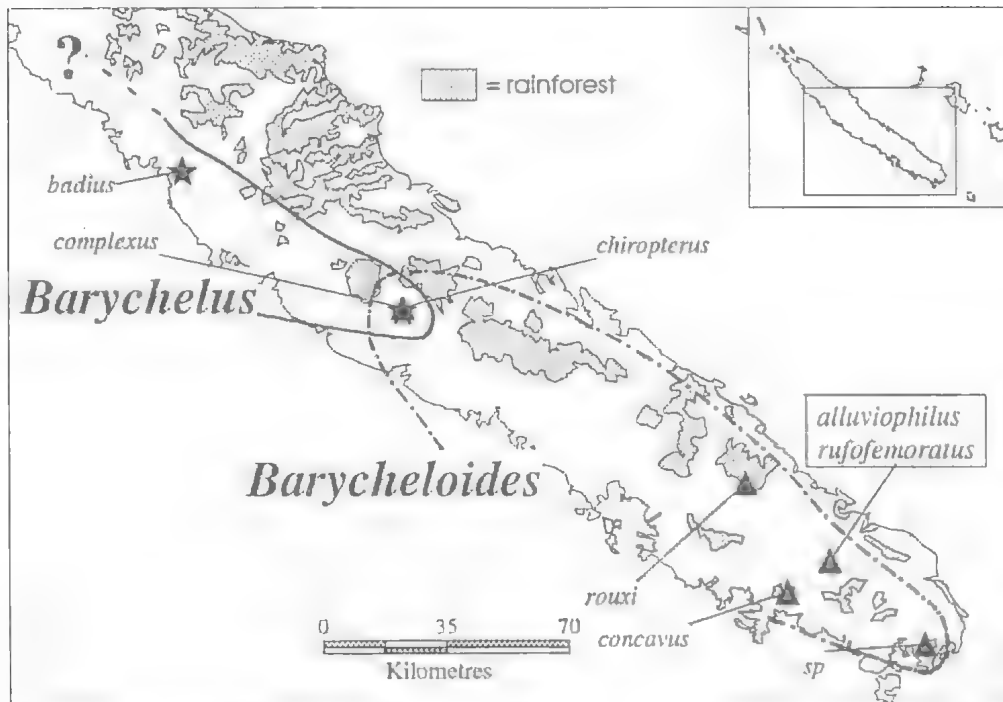


FIG. 171. Records of *Barycheloides* & *Barychelus* in southern New Caledonia with rainforest areas shaded.

- 3(2). Abdomen entirely black without pattern; carapace length c.6-8 . . . . *B. rufosemoratus*  
 Abdomen with light mottling and 3 pairs of diagonal lines dorsally and pallid ventrally; carapace length c.10-11 . . . . *B. alluviophilus*
- 4(2). Basifemoral thorns present . . . . *B. concauius*  
 No basifemoral thorns . . . . *B. chiropterus*

***Barycheloides alluviophilus* sp. nov.**  
 (Figs 2E, 9B, C, 171-173, Table 14)

**MATERIAL EXAMINED**

TYPES. Holotype ♂, Rivière Bleue, parcelle 4, altitude 150m, 22°06'13"S 166°39'16"E, Province Sud, NC, rainforest on flood plain, taken from malaise traps, 9-26 May 1986, LBL, DJC, MNHP; ♂ paratype, same data but, 23 Apr-9 May 1986, QMS19095; paratype ♂, same data but parc.5, 25 Nov-8 Dec 1986, LBL, AST, DJC, MNHP; ♂ paratype, same data but Parc.7, on slope, 25 Dec 1986-5 Jan 1987, MNHP; ♀ allotype, Rivière Bleue, flood plain, 4 Sep 1990, RR, QMS17750; ♀ paratype, same data, AMNH; 1 ♀, same data but NP, PG, AMNH; paratype ♂, same data but not flood plain, 160m altitude, 23-29 Jul 1987, LBL, ST, QMS19103.

**OTHER MATERIAL EXAMINED**

Rivière Bleue, NC, rainforest on flood plain at 150-160m: 1 fungally attacked ♀, 3 Nov 1986, AST, MNHP.

**DIAGNOSIS**

Differs from *B. concauius* in lacking thorn spines on femora and patellae III, IV, and in wider eye group configuration and from *B. rufosemoratus* in the fewer teeth on the claws on I of ♂♂ and bare claws on IV.

Large, carapace 10-12 long. FEMALE. 10-20 basifemoral thorns prolaterally on I, II, retrolaterally on III, IV. Spermathecae two wide mounds, each with slender lobe arising basally from outer half of dorsal face with apical expansion. MALES. Tibia I with small distal spur proventrally, megaspine long slender; microspur and megaspine absent. Claws with one row of teeth or bare. Bulb broadly pyriform; embolus origin gradual, shaft finely grooved, distal half with two distinct keels meeting to form deep, almost closed gutter.

**ETYMOLOGY**

From the Latin, alluvium, and Greek, philos love, and alludes to the burrow in a flood swept rainforest.

**DESCRIPTION**

**HOLOTYPE MALE MNHP**

Carapace 10.10 long, 8.63 wide. Abdomen 9.38 long, 6.88 wide. Total length, 22.



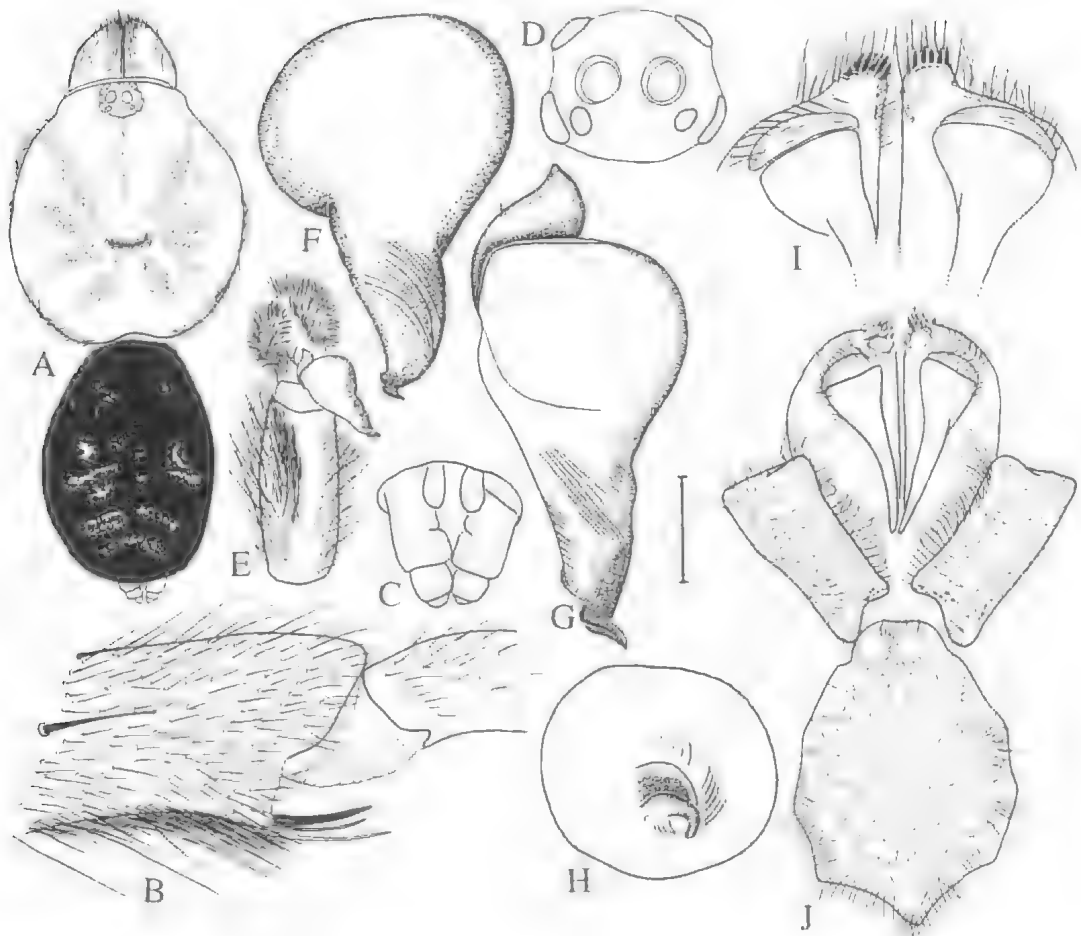


FIG. 172. *Barycheloides alluviophilus* sp. nov., holotype ♂, MNHP. A, carapace, chelicerae & abdomen, dorsal view; B, tibia & metatarsus I, prolateral view; C, spinnerets, ventral view; D, eyes, dorsal view; E, palpal tibia, cymbium & bulb, ventral right, ventral view; F-H, palpal bulb, retrolateral (F), ventral (G) & axial views (H); I, apical chelicerae with rastellum, posterior raised to maximize size of rastellar mound, inclined ventral view; J, sternum, maxillae, labium & chelicerae, ventral view. Scale line = 1mm (B, D, I); 2mm (C, E, J); 4mm (A); 0.5mm (F-H).

**Colour.** Carapace, chelicerae, and legs orange brown, no darker areas or annulations. Abdomen dorsally brown with white mottling forming four pairs of diagonal lines; ventrally entirely pallid, save for few thin brown marks posteriorly.

**Carapace.** Pilosity: uniform dense cover of fine brown hairs on caput with dense bush of longer silver hairs anteromedially and on lateral margins; striae distinct, narrow. Bristles: uniform cover of short brown on interstrial ridges including margins; none enlarged beside posterior striae; c.10 long thick and few finer anteromedially and band of long on each side of caput; c.8 long thick and several finer between PME, and c.5

long thick and several finer between ALE; 2-3 bands of strong bristles and dense bush of long wavy silver hairs on lateral margins. Fovea short, clearly procurved. Clypeus absent. Small oval sclerotised area in front of ALE. Sclerotised cuticular shelf around posterior margins.

**Eyes.** Tubercle strongly raised. Group occupies 0.30 of head-width; front width, back width, length, 58, 70, 46, respectively. Back row straight. MOQ front width, back width, length, 43, 46, 30, respectively. AME:ALE:PME:PLE, 20:18:11:20. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.4; ALE-PLE, 0.8; PME-PME, 1.5; PME-PLE, 0.1; ALE-ALE, 1.5.

**Chelicerae.** Long black bristles and bush of silver hairs prodorsally, laterally light pile of silver hairs then more bristles. Rastellum a strong conical process extending 0.40 below fang base and armed with c.10 short conical spines on anterior face. Furrow promargin short with 9 large and small teeth, basomesally with 10-15 granules and a sinuous row of 9 small teeth for length of furrow.

**Labium.** 0.81 long, 1.56 wide. Labiosternal suture a wide shallow groove of two joined sigilla.

**Maxillae.** 3.00 long in front, 3.75 long behind, 1.50 wide; with 8-9 strong blunt cuspules in inner angle. Heel slightly produced, angular; anterior lobe broad, indistinct.

**Sternum.** 5.19 long, 4.13 wide. Sigilla: posterior pair large, c.11% of sternal width, asymmetrically placed, either in against margin or one length removed; other sigilla, all distinct, oval, marginal.

**Legs.** Light pile of silver hairs and black bristles. Tibia I with small distal spur proventrally, megaspine long slender tapering slightly thicker than other spines, below it also on spur tip one thick spinelike bristle and one slender spine, microspur and megaspine absent. Thorn spines absent, but group of many strong bristles prolaterally on patellae III, IV. Preening combs absent, save for group of two to three closely set spines retroventrally on III, IV.

	I	II	III	IV	Palp
Femur	9.00	8.63	6.50	10.06	4.94
Patella	4.94	4.69	4.06	4.81	3.06
Tibia	6.81	6.69	6.44	8.94	3.13
Metatarsus	5.50	5.94	7.50	10.44	-
Tarsus	3.31	3.38	3.44	4.13	2.13
Total	29.56	29.33	27.94	38.38	13.26

**Scopula.** Metatarsi: I, II, full, dense, entire; III, dense, in distal 1/2, mixed with few setae; IV, two narrow triangles in distal 1/5. Tarsi: I, II, III, full, dense, entire; IV, dense, divided by setal band 2-3 wide.

**Spines.** I: fe p1, d8, pa 0, ti p1, v8 + megaspine, me 0. II: fe p2, d5, pa 0, ti p2, v9, me v1 basal. III: fe p3, d5, r3, pa 0, ti r2, v11, me p2, r2, v6. IV: fe p1w, d5, r2, pa 0, ti r2, v11, me p2, r3, v14. Palp: fe p1, d3w, pa 0, ti p1, v3.

**Claws.** One row of 4 teeth on long claws (I) in outer row only; or long, bare (IV).

**Trichobothria.** Two rows, each of c.8 for 1/2 length of tibiae; c.30 on metatarsi in curving row crossing to retrolateral face for proximal 2/3, several rows of trichobothria distally; c.30 filiform on tarsi, basal four shorter, distally incrassate.

**Palp.** Bulb broadly pyriform; embolus origin gradual, shaft finely grooved, distal half with two distinct keels meeting to form deep, almost closed gutter; cymbial lobes dimorphic, retrolateral face slightly concave.

**Spinnerets.** PMS 0.85 long, 0.38 wide, 0.38 apart, and c.0.41 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 1.68, 0.58, 0.20, 2.46 long, respectively.

#### ALLOTYPE FEMALE

Carapace 10.90 long, 10.50 wide. Abdomen 10.00 long, 6.88 wide. Total length, 25.

**Colour.** Carapace and legs orange brown, chelicerae dark reddish brown, no annulations on legs. Abdomen dorsally brown with fine white mottling forming three pairs of narrow diagonal bands; ventrally pallid, laterally brown, medially with two fine transverse brown lines.

**Carapace.** Pileosity: uniform cover of fine brown hairs, shorter on caput than interstitial ridges; hairs form narrow bands on thoracic region; striae distinct, narrow. Bristles: 6 long thick and many finer anteromedially and few short in narrow band beside caput; three long and 20-30 finer between PME, and 3 and several finer between ALE; lateral margins with light bush of fine wavy hairs. Fovea wide, strongly procurved. Clypeus absent.

**Eyes.** Tubercle distinct, raised. Group occupies 0.27 of head-width; front width, back width, length, 66, 73, 42, respectively. Back row recurved. MOQ front width, back width, length, 45, 49, 32, respectively. AME:ALE:PME:PLE, 22:20:11:17. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.5; ALE-PLE, 0.8; PME-PME, 1.4; PME-PLE, 0.1; ALE-ALE, 1.5.

**Chelicerae.** Band of few long and many short black bristles prodorsally, laterally bands of fine setae. Rastellum evident dorsally, a broad high process, 0.60 in basal diameter, 0.40 apically, c.0.80 long, capped with 10-15 short strong conical spines on anterior face. Furrow promargin short, with 5 large and 3 small teeth, basomesally with 10-15 granules, distally with 10 small teeth reaching apical end of furrow.

**Labium.** 0.69 long, 2.00 wide. Labiosternal suture a narrow shallow groove.

**Maxillae.** 3.19 long in front, 4.38 long behind, 1.88 wide; with 3-6 large blunt cuspules in inner angle. Heel broad, slightly produced; anterior lobe broad, indistinct.

**Sternum.** 5.69 long, 4.69 wide. Sigilla all small, oval, and marginal but distinct.

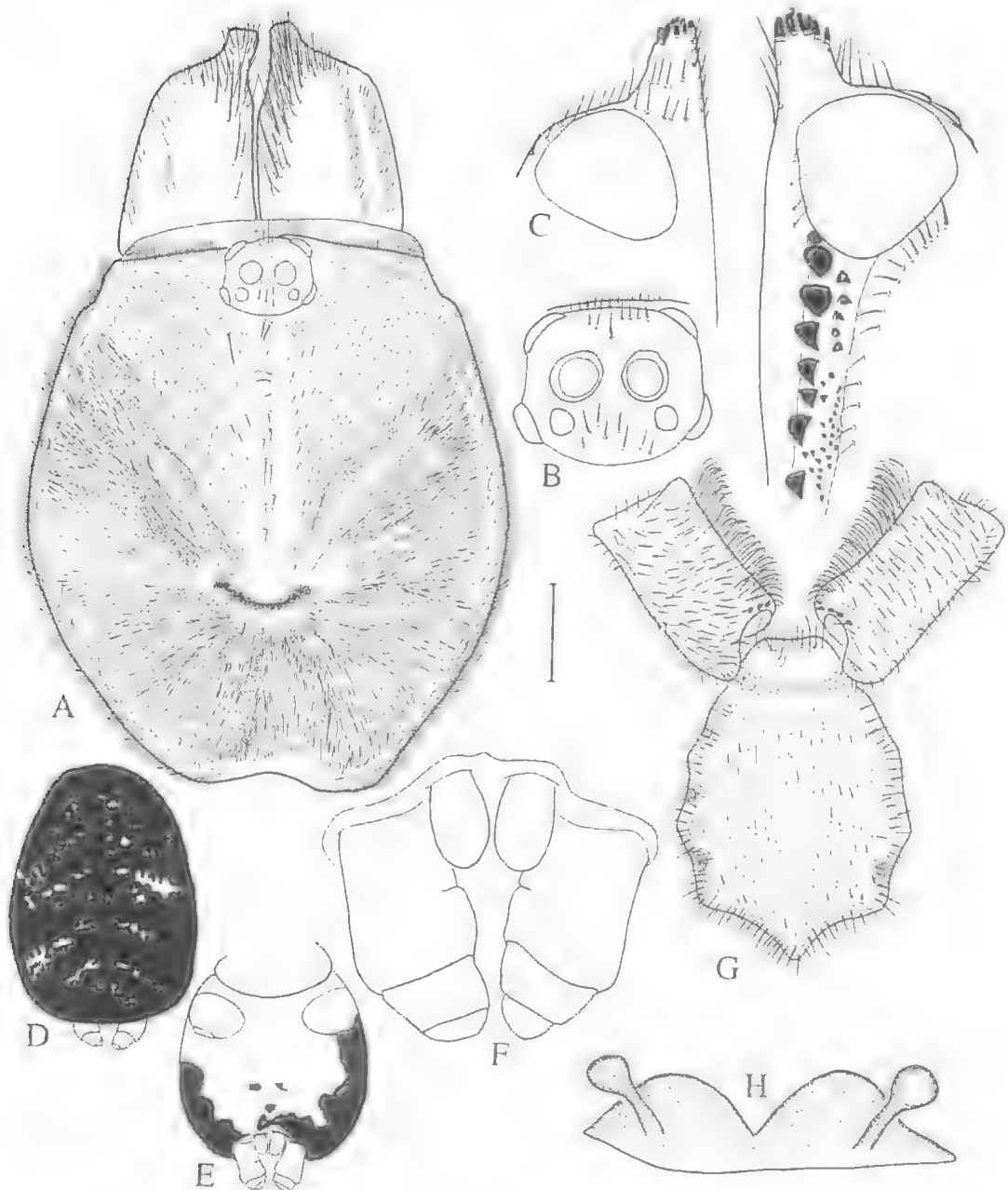


FIG. 173. *Barycheloides alluviophilus* sp. nov., allotype ♀ (MNHP). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, apical chelicerae with rastellum, ventral view; D, E, abdomen, dorsal (D), ventral view (E); F, spinnerets, ventral view; G, sternum, maxillae & labium, ventral view; H, spermathecae. Scale line = 1mm (B, C, F); 2mm (A, G); 4mm (D, E); 0.5mm (H).

*Legs.* 10-20 basifemoral thorns prolaterally on I, II, retrolaterally on III, IV. Thorn spines absent but many bristles prolaterally on patellae III, IV, most proximal short, conical. Preening combs are by three closely grouped spines retroventrally on IV.

**Scopula.** Metatarsi: I, II, full, very dense, entire; III, dense, in distal half, mixed with setae; IV, two narrow triangles in distal 1/6. Tarsi: I, II, full, very dense, entire; III, dense, entire save distally divided by pallid setal band 1-2 wide; IV, dense, divided by setal band 4-6 wide proximally, 10-12 wide distally.

	I	II	III	IV	Palp
Femur	7.19	6.63	6.19	7.69	5.44
Patella	4.81	4.50	4.31	5.00	3.63
Tibia	4.88	4.44	4.19	6.63	3.44
Metatarsus	3.88	3.81	4.56	7.25	-
Tarsus	2.06	2.19	1.75	2.31	2.94
Total	22.82	21.57	21.00	28.88	15.45

**Spines.** I: fe p1, pa 0, ti v4, me v1 distal. II: fe p1, pa 0, ti p2, v5, me v2. III: fe d1, r1, pa 0, ti r2, v8, me p2, r2, v4. IV: fe d1w, r1w, pa 0, ti r3, v9, me p2, r3, v14. Palp: fe p2, pa v1, ti p2, v10.

**Claws.** 1 long and 4 very small teeth in medial keel (1); similar size on IV, bare; palpal claw 1/2-1/3 size of leg claws, bare.

**Trichobothria.** Two rows, each of c.12 for half length of tibiae; c.13 in distal half of metatarsi in curving row; c.20 long filiform and 4-6 short proximal, possibly clavate, on tarsi.

**Spermathecae.** Two wide mounds, each with slender lobe arising basally from outer half of dorsal face with apical expansion.

**Spinnerets.** PMS 1.00 long, 0.55 wide, 0.38 apart, and c.0.49 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 1.65, 0.60, 0.15, 2.40 long, respectively.

#### DISTRIBUTION, BURROW & HABITAT

Rivière Bleue, southern NC, in rainforest on a flood plain at 150-160m altitude. The burrow was a near vertical sinuous tube about 12-18cm deep with a thick plug door.

#### *Barycheloides chiropterus* sp. nov. (Figs 171, 174, Table 14)

#### MATERIAL EXAMINED

**TYPES.** Holotype ♀, Col des Roussettes, 21°27'S 165°28'E, in rainforest at 490m, Province Nord, New Caledonia, 8 Sep 1990, RR, QMS17752; ♀, same data, QMS17753; ♀, same data but, PG, AMNH.

**OTHER MATERIAL EXAMINED.** Two penultimate ♂♂ taken with types.

#### DIAGNOSIS

Females have strong thorn spines on femora-patellae III and IV, like *B. concavus*, but differ in lacking basifemoral thorns.

Two spermathecae, each a large domed mound with small lobe and enlarged apex arising just

anterior lateral of center on dorsal face. Mound with many conical thorn setae near junction of femora-patellae III, IV. Preening combs and basifemoral thorns absent.

#### ETYMOLOGY

From the mammal group name Chiroptera, alluding to the French 'les roussettes' which are the large fruit bats ('Flying Foxes') seen in the area.

#### DESCRIPTION

##### HOLOTYPE FEMALE QMS17752

Carapace 10.40 long, 8.75 wide. Abdomen 13.10 long, 10.00 wide. Total length, 28.

**Colour.** Carapace orange brown, caput darker, chelicerae reddish brown, and legs orange brown, not annulated. Abdomen laterally pallid, dorsally brown with white mottling and paired white transverse diagonal bands forming broad chevrons; ventrally almost entirely pallid with small brown areas beside spinnerets and few narrow lines medially.

**Carapace.** Pilosity: caput with uniform pile of fine wavy brown hairs and short black bristles, elsewhere lines of hairs along stria margins and on ridges; striae distinct, narrow, glabrous; no enlarged black bristles beside posterior striae. Bristles: c.8 black posteriorly directed on caput midline; 2 long and many finer between PME, and 1 long in front of AME, 8-10 thick and several finer between ALE. Lateral margins with brush of fine brown hairs. Fovea wide, procurved. Sclerotised hirsute shelf below posterior and lateral edges of carapace.

**Eyes.** Tubercle distinct, raised. Group wide, line joining front edge of AME just cuts line joining back edge of ALE, occupies 0.25 of head-width; front width, back width, length, 68, 78, 62, respectively. Back row slightly recurved. MOQ front width, back width, length, 44, 62, 33, respectively. AME:ALE:PME:PLE, 18:18:13:20. Eye interspaces: AME-AME, 0.7; AME-ALE, 0.7; ALE-PLE, 1.1; PME-PME, 1.9; PME-PLE, 0.2; ALE-ALE, 2.2.

**Chelicerae.** Narrow band of few long and many short black bristles and fine hairs prodorsally, laterally with narrow band of fine hairs. Rastellum a massive conical mound capped with short blunt spines, the mound extends well below fang edge and set on inner edge of chelicerae. Furrow promargin short, with 6 very large, closely set teeth mixed with 4 smaller teeth, basomesally with 10-12 small teeth continuous with a single row of 12 teeth in line for length of furrow.

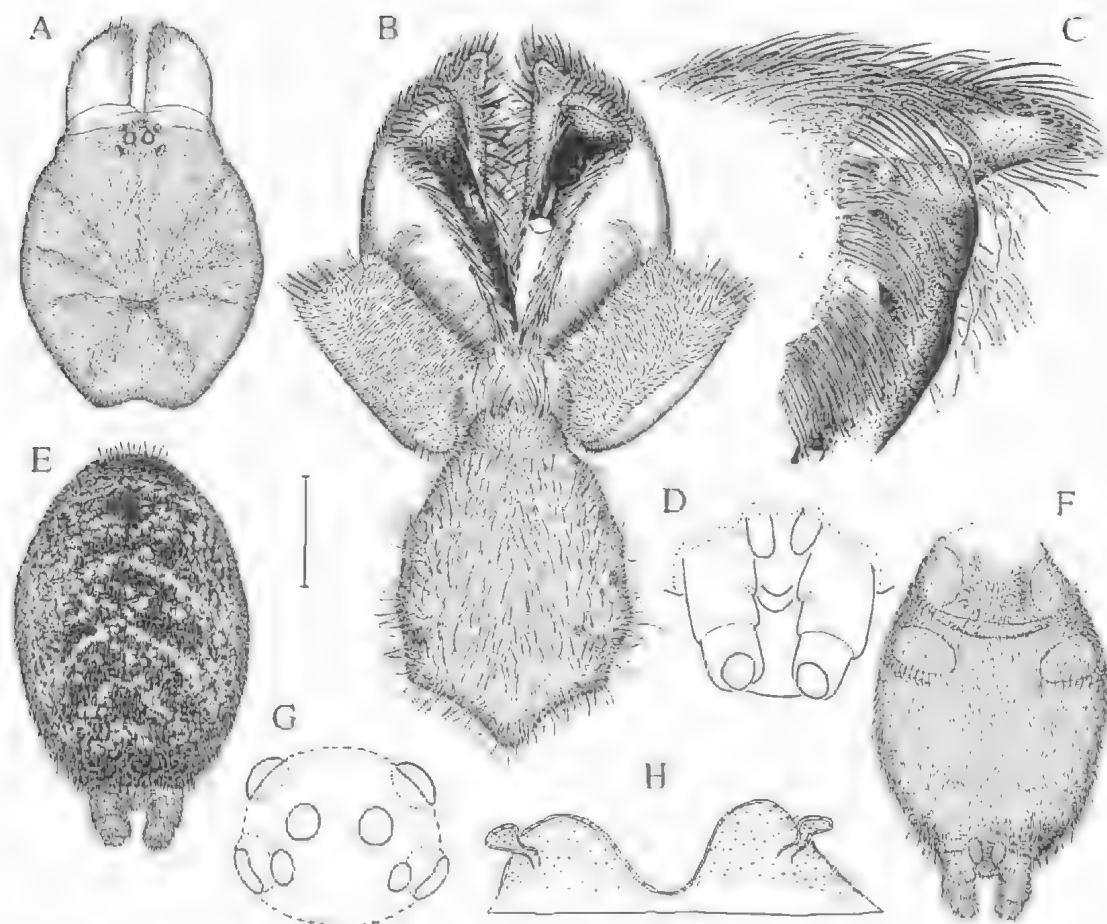


FIG. 174. *Barycheloides chiropterus* sp. nov., holotype ♀ (QMS17752). A, carapace & chelicerae, dorsal view; B, chelicerae, sternum, maxillae & labium, ventral view; C, rastellum, retroventral view; D, spinnerets, ventral view; E, F, abdomen, dorsal (E), ventral view (F); G, eye group, dorsal view; H, spermathecae. Scale line = 4mm (A, E, F); 2mm (B); 1mm (C, D, G); 0.5mm (H)

**Labium.** 0.94 long, 2.06 wide. Labiosternal suture a narrow groove of two separated mounded sigilla.

**Maxillae.** 2.88 long in front, 4.38 long behind, 1.88 wide; with 3 small blunt cuspules in inner angle. Heel produced, angular; anterior lobe indistinct.

**Sternum.** 5.63 long, 4.50 wide. Two pairs of posterior sigilla, outer larger, 0.40 long, inner 0.20 long; other sigilla oval, marginal c. 7-9% of sternal width long. Fringe of long fine hairs on margins.

**Legs.** Mound with many conical thorn setae near junction of femora-patellae III, IV. Preening combs and basifemoral thorns absent.

**Scopula.** Metatarsi and tarsi: I, II, full, high on article, very dense, entire. Metatarsi: III, in distal

half, moderately dense, mixed with setae; IV, two narrow triangles in distal 1/8. Tarsi: III, full, dense, entire, save for narrow pallid setal band 1-2 wide, distally wider; IV, dense, full, divided by dark setal band 4-6 wide.

	I	II	III	IV	Palp
Femur	7.00	6.25	5.69	7.81	5.06
Patella	4.75	4.38	3.94	4.81	3.44
Tibia	4.63	4.06	3.75	6.00	3.06
Metatarsus	3.88	3.63	4.19	6.88	—
Tarsus	2.25	2.06	1.75	2.31	2.69
Total	22.51	20.38	19.32	27.81	14.25

**Spines.** Femora I-IV with long spine-like bristle basally. I: fe p1, pa 0, ti v5, me v2. II: fe p1, pa 0, ti p1, v6, me v2. III: fe p2w, d4w, r3, pa only conical setae, ti r1, v8, me p2, r2, v6. IV: fe d4w, r1, pa only conical setae, ti r3, v9, me p1, r2, v8. Palp: fe p1, pa d1, p3, ti v9.

**Claws.** 1 minute basal and 2 small teeth in medial keel on I, claws on IV bare; palpal claw small, bare.

**Trichobothria.** Two rows, each of c. 11 for half length of tibiae; c. 15 on metatarsi, row crosses to retrolateral face by distal third and then diverges only slightly from midline; c. 8 thin small clavate and c. 12-15 filiform on tarsi.

**Spermathecae.** Each a large domed mound with small lobe and enlarged apex arising just anterior lateral of center on dorsal face.

**Spinnerets.** PMS 0.88 long, 0.52 wide, 0.48 apart, and c. 0.41 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 1.72, 0.44, 0.16, 2.32 long, respectively.

#### DISTRIBUTION, BURROW & HABITAT

Rainforest at Col des Roussettes, central NC. The burrow was a sinuous tube without side branches but with leafy collar and wafer thin door.

#### *Barycheloides concavus* sp. nov. (Figs 171, 175, Table 14)

#### MATERIAL EXAMINED

**Types.** Holotype ♀, Mts Koghis, 22°11'S 166°32'E, Province Sud, NC, rainforest, altitude c. 500m, 23 May 1987, RR, QMS4135; 2 ♀♀ paratypes, same data. MNHP, AMNH; 3 ♀♀, same data, QMS19100.

#### DIAGNOSIS

Differs from other species in the longer eye group and the strong thorn spines on femora and patellae III and IV, and many strong basifemoral thorns and preening combs.

**FEMALES.** Spermathecae two, each a low domed mound with long sinuous lobe; each sinuous lobe rises higher than mound with widened tip forming conical cup. Thorn spines strong and numerous on femora-patellae III, IV. **MALES.** Unknown.

#### ETYMOLOGY

From the Latin *concavus* and alludes to the concave door of the burrow.

#### DESCRIPTION

##### HOLOTYPE FEMALE

Carapace 10.10 long, 8.63 wide. Abdomen 10.00 long, 8.13 wide. Total length, 24.

**Colour.** Carapace orange brown, chelicerae dark reddish brown, and legs light orange brown. Abdomen dorsally pallid light areas of brown form three chevrons in posterior half, anteriorly with broken areas of light brown; ventrally pallid

with transverse brown line just in front of spinnerets.

**Carapace.** Pilosity: light uniform cover of fine silver hairs, striae margins with fine black setae; striae distinct, narrow. Bristles: c. 15 erect anteromedially and many fine in band beside caput; four long thick and several finer between PME, and one long thick and 10-12 finer between ALE; several lines of fine long white hairs on lateral margins. Fovea wide, strongly procurved, deep.

**Eyes.** Tubercle distinct. Group occupies 0.24 of head-width; front width, back width, length, 54, 68, 52, respectively. Back row straight. MOQ front width, back width, length, 36, 47, 31, respectively. AME:ALE:PME:PLE, 17:16:13:22. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.7; ALE-PLE, 1.2; PME-PME, 1.6; PME-PLE, 0.1; ALE-ALE, 1.7.

**Chelicerae.** Stout, geniculate, covered with narrow band of few long fine black and many shorter bristles prodorsally, laterally narrow band of short setae. Rastellum strong, visible in dorsal view, viewed ventrally each process a long narrow truncated cone with 15-20 short strong conical spines anteriorly down to lower edge. Furrow promargin with 7 strong teeth, basomesally with 15-20 small teeth in broad cluster at base of long row of 12 small teeth extending to fang base and set just inside retrolateral edge.

**Labium.** 0.94 long, 2.13 wide. Labiosternal suture a shallow parallel groove.

**Maxillae.** 2.75 long in front, 3.94 long behind, 1.81 wide; with c. 17-30 large blunt and smaller (at innermost corner) cuspules in inner angle. Heel narrow produced; anterior lobe small, distinct.

**Sternum.** 5.44 long, 4.44 wide. Sigilla: posterior and middle pairs in distinct depressions, narrow, oval, submarginal; anterior pair small, oval, marginal.

	I	II	III	IV	Palp
Femur	6.63	6.00	5.25	6.94	5.13
Patella	4.69	4.38	3.94	4.63	3.31
Tibia	4.38	4.06	3.56	6.44	3.19
Metatarsus	3.25	3.31	3.56	6.56	—
Tarsus	1.88	1.88	1.75	2.00	2.63
Total	20.83	19.63	18.06	26.57	14.26

**Legs.** Thorn spines prolateral on junctions of femora-patellae III, IV, strongest on IV, 25-30 on femora IV, 10-15 on femora III. Preening combs: 1 of 2-3 strong setae on retroventral III, IV. Many strong basifemoral thorns: 50-60 prolateral and more on dorsal line of I, II; 30-40 dorsally on III; 40-50 retrolaterally and dorsally on IV; 15-20 on palp.

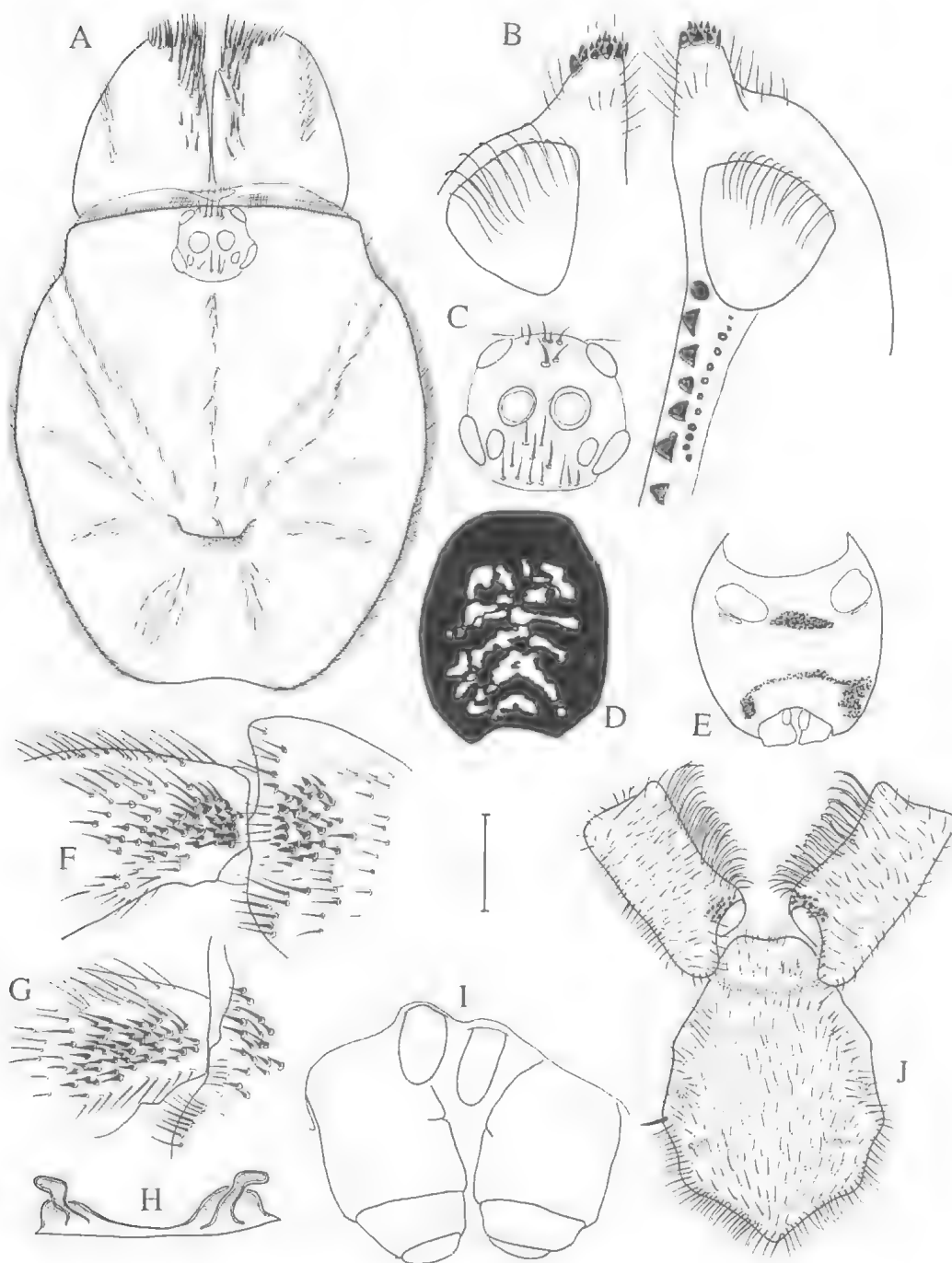


FIG. 175. *Barycheloides concavus* sp. nov., holotype ♀ (QMS4135). A, carapace & chelicerae, dorsal view; B, rastellum, ventral view; C, eye group, dorsal view; D, E, abdomen, dorsal view (D), ventral view (E); F, patella, & femur IV, prolateral view; G, patella & femur III, prolateral view; H, spermathecae; I, spinnerets, ventral view; J, sternum, maxillae & labium, ventral view. Scale line = 4mm (A, D, E, J); 1mm (B, C, F, G, I); 0.5mm (H).



**Scopula.** Metatarsi: I, II, full, very dense, extending to lateral faces, entire; III, moderately dense, in distal 5/6, mixed with only 10 setae, not divided; IV, sparse, in distal quarter, intermixed with setae. Tarsi: I, II, III, full, very dense, extending to lateral faces, entire, save on III for few longer pallid setae intermixed; IV, dense, divided by strongly triangular setal band c.6 wide basally to 20–30 wide distally.

**Spines.** I: fe p1, d2, pa 0, ti v5, me v1 distal. II: fe p1, d1, pa 0, ti p2, v7, me v1 distal. III: fe d2, r3, c.12 thorn spines, pa 20–30 thorn spines only, ti v7, me p2, r2, v5. IV: fe d1, 25–30 thorn spines, pa, 15–20 thorn spines, ti v6, me v7. Palp: fe p1, pa p1, v3, ti p5, v11.

**Claws.** 3 short teeth in medial row (I–IV); palpal claw half size, bare.

**Trichobothria.** Two rows, each of c.7 for two-thirds of tibiae; c.11 on metatarsi in diagonal row; c.27 filiform on tarsi, no clavate evident.

**Spermathecae.** Two, each a low domed mound with long sinuous lobe arising in midline of mound, very close to external aperture and off the dorsal face; each sinuous lobe rises higher than mound and has widened tip forming conical cup.

**Spinnerets.** PMS 0.52 long, 0.45 wide, 0.25 apart, and c.0.40 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 1.50, 0.78, 0.50, 2.78 long, respectively.

#### DISTRIBUTION, BURROW & HABITAT

Mts Koghis, at about 500m, in rainforest characterised by very large ferns without trunks. Burrows were common in one area. Five spiders were taken from five burrows in an area of 0.5m<sup>2</sup>. The burrows were L-shaped tubes, each arm 3–7cm long. Burrows were closed by doors with edges set c.1–3mm below the soil surface. The doors were c.1mm thick, and all distinctly concave.

#### *Barycheloides rouxi* (Berland, 1924) (Figs 171, 176, Table 14)

*Barychelus rouxi* Berland, 1924, p. 172, figs 4–8; Roewer, 1942, p. 213; Bonnet, 1955, p. 850. n. comb.

#### MATERIAL EXAMINED

Types. Holotype ♂, Mt Humboldt, 21°52'S 166°25'E, altitude 1200m, 12 Sept 1911, labelled '*Barychelus Rouxi* Berland Type', MNHN; paratype juvenile ♀, same data, Naturhistorisches Museum, Bâle.

#### OTHER MATERIAL EXAMINED

♂, 'New Caledonia, Mar–Apr 1939, L. Macmillan, coll. Acc.No. 37523', AMNH

#### DIAGNOSIS

Males differ from those of all other species of *Barycheloides* in the reduced size of the rastellum and the low tibial spur in the ♂.

**MALES.** Tibia I with low spinose mound with one large thick and several fine bristles on proventral distal edge; microspur and megaspine absent; metatarsus I distally incrassate and proximally excavate. Bulb large, pyriform, twisted with one large keel and many fine ridges on embolus; upper face of basal portion of bulb adjacent to tibia distinctly rugose. Thorn spines and preening combs absent. **FEMALES.** Unknown.

#### DESCRIPTION

##### HOLOTYPE MALE MNHN

Carapace 6.51 long, 5.79 wide. Abdomen 5.92 long, 10.00 wide, Total length, 14.

**Colour.** Carapace, chelicerae, and legs reddish brown; abdomen entirely and uniformly brown; booklung covers light yellow.

**Carapace.** Bristles: brown on caput and interstitial ridges; many out of and in front of fovea; thick brown on lateral margins; long black on interstitial ridges; 12 between PME; 12 between AME and ALE; 8–10 long, thick, anteromedially. Fovea distinctly procurved; caput low; clypeus absent.

**Eyes.** Group occupies 0.37 of head-width; front width, back width, length, 69:77:55. Tubercle distinct, raised. AME:ALE:PME:PLE, 20:24:14:18. MOQ front width, back width, length, 47:55:35. Back row procurved. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.5; ALE-ALE, 1.6; ALE-PLE, 0.2; PME-PLE, 0.2; PME-PME, 1.7.

**Chelicerae.** Small; anteriorly with slight distal excavation. Rastellum on rounded raised mound, inner distal edge with distinct process with 3–4 thick spines. Furrow short; promargin with 7 large spaced teeth, mesally with row of 7 smaller teeth extending almost to fang base; basomesally a group of 5–7 granules. Intercheliceral tumescence absent.

**Labium.** 0.56 long, 1.32 wide; suture narrow, continuous.

**Maxillae.** 1.91 long in front, 2.35 long behind. 0.94 wide; with 4–5 thick pointed cusps.

**Sternum.** 3.24 long, 2.88 wide; thick bristles and fine hairs on edges. Posterior, middle, anterior sigilla 0.35, 0.17, 0.14 long, oval, near margin.

**Legs.** Tibia I with low spinose mound with one large thick and several fine bristles on proventral

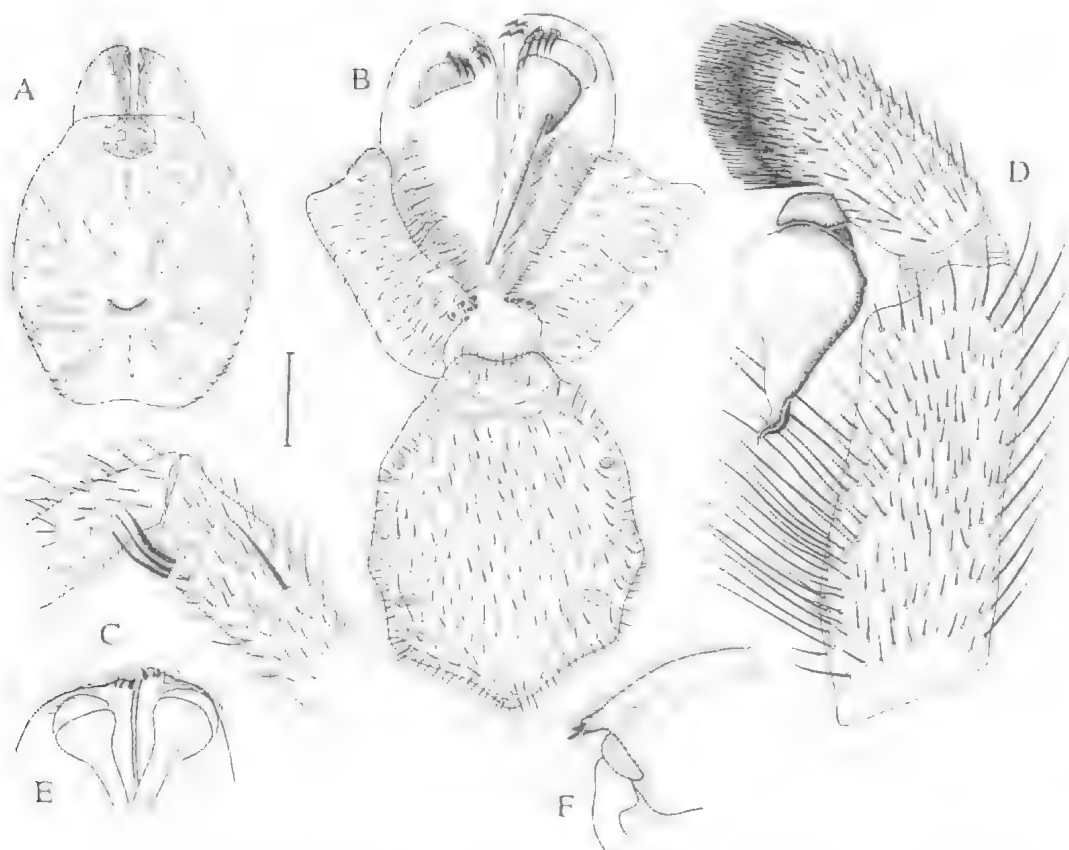


FIG. 176. *Barycheloides rouxi* (Berland, 1924), holotype ♂ (MNHNP). A, carapace & chelicerae, dorsal view; B, chelicerae, sternum, maxillae & labium, ventral view; C, tibia & metatarsus I, prolateral view; D, palpal tibia, cymbium & bulb, prolateral view; E, F, chelicerae showing rastellum, ventral view (E), retrolateral view outer face. Scale length = 1mm (B, C, E, F); 2mm (A); 0.5mm (D).

distal edge; microspur and megaspine absent; metatarsus I distally incrassate and proximally excavate. Thorn spines absent. Preening combs: III, two close setae pro- and retrolaterally. Tarsi I broad.

	I	II	III	IV	Palp
Femur	6.06	5.63	5.00	6.69	3.06
Patella	3.38	3.00	2.50	3.13	1.88
Tibia	4.63	4.19	3.88	6.25	1.94
Metatarsus	3.19	3.19	3.81	6.19	-
Tarsus	2.06	2.00	1.94	2.38	1.38
Total	19.32	18.01	17.13	24.64	8.26

**Scopula.** Metatarsi: I, II, entire, distal 5/6; III, divided, thin, in distal half; few scattered hairs in distal 1/6. Tarsi: I, II, entire, full; III, divided, ventral surface collapsed; IV, like III, very thin, divided by setal band 5-6.

**Spines.** I: fe 0, pa 0, ti p2, v4, me 0. II: fe p1, pa 0, ti p3, v6, me v3w. III: fe d1w, r1, pa 0, ti p1,

r2, v7, me p2, r3, v7. IV: fe 0, pa 0, ti r2, v8, me p2, r4, v7. Palp: fe p1, pa 0, ti p1.

**Trichobothria.** Tibia with c. 10-12 for its length; metatarsi with c. 10, row curves to retrolateral face at distal 1/4; tarsi with 15-20 filiform in triangular area, no clavates evident.

**Claws.** On I, one row of 4 short teeth set high on outer faces; II, 3-4 small teeth set high on prolateral faces and 1 small basal tooth on retrofaces; III, 2-3 small teeth on prolateral faces; IV, bare.

**Spinnerets.** PMS 0.35 long, 0.15 wide, 0.12 apart, 0.36 of basal PLS in diameter. Basal, middle, apical, and total articles of PLS 0.82, 0.21, 0.12, 1.15 long, respectively.

**Palp.** Bulb large, pyriform, twisted with one large keel and many fine ridges on embolus; upper face of basal portion of bulb adjacent to

tibia distinctly rugose; cymbium deeply incised, both faces straight.

#### DISTRIBUTION & HABITAT

Mt Humboldt, SE NC, in rainforest at 1200m.

#### REMARKS

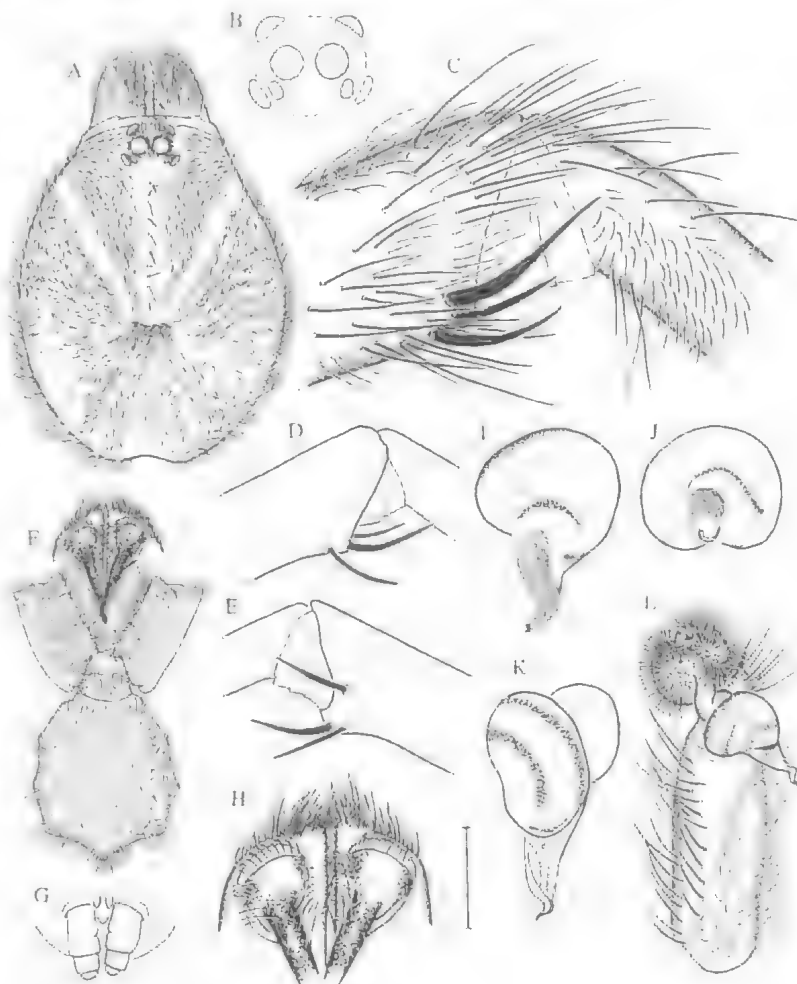
The paratype '♀' is not described because it is not adult; it was not in good condition when I first saw it in 1983.

#### *Barycheloides rufofemoratus* sp. nov. (Figs 12A, 13A, 171, 177, 178, Table 14)

#### MATERIAL EXAMINED

TYPES. Holotype ♂, allotype ♀, Rivière Bleue, 22°06'13"S, 166°39'16"E, Province Sud, NC, parcelle 7, 170m, rainforest on slope, malaise trap, 7-21 Nov 1988, LBL, DJC, MNHP. PARATYPES. Rivière Bleue, NC, rainforest on flood plain at 150-160m: ♀, open burrow (door damaged?) of 5-7cm long in bank, 21 May 1987, RR, QMS11727; ♀, 27 Oct 1988, RR, QMS19096; 3 ♀♀, 4 Sep 1990, RR, QMS17745; 1 ♀, 4 Sep 1990, NP, PG, RR, AMNH; 4 ♀♀ (1 penultimate ♂, non-type), same data, AMNH; paratype ♀, same data but Parc. 7, on slope at 170m, 16 Jun-7 Jul 1987, LBL, DJC, AST, MNHP.

FIG. 177. *Barycheloides rufofemoratus* sp. nov., holotype ♂ (MNHP). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C-E, tibia & metatarsus I, prolateral view (C, D), retrolateral view (E); F, sternum, maxillae, labium & chelicerae, ventral view; G, spinnerets, ventral view; H, apical chelicerae showing rastellum; I-K, palpal bulb, retrolateral (I), ventral (K) & axial views (J); L, palpal tibia, cymbium & bulb, ventral view. Scale line = 1mm (B, D, E, H, L); 2mm (A, F, G); 0.5mm (C, I-K).



#### OTHER MATERIAL EXAMINED

Rivière Bleue, Province Sud, NC, rainforest on flood plain at 150-160m: 1 penultimate ♂ + 6 juv., 21 May 1987, RR, QMS19097; 2 juv., malaise traps, 11-23 Apr 1986, LBL, DJC, MNHP. La Montagne des Sources, 22°09'S 166°35'E, Province Sud, NC, rainforest at 900m, 5 Sep 1990: ♀, RR, QMS17753; 2 juv., NP, PG, RR, AMNH. Forêt Nord, E. Plaine des Lacs, 22°19'S 166°55'E, southern New Caledonia, rainforest remnant: ♀, 25 Oct 1988, RR, QMS19102.

#### DIAGNOSIS

Males differ from those of *B. alluviophilus* in having teeth on both faces of all claws of I and teeth on claws of IV. Males and ♀♀ further differ in that they are much smaller (about half length) and that the abdomen is entirely black and lacks any pattern dorsally or ventrally.

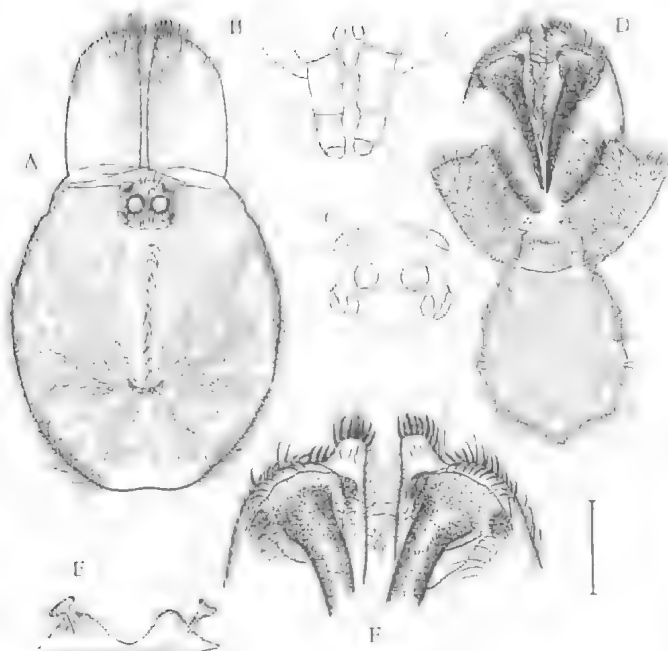


FIG. 178. *Barycheloides rufofemoratus* sp. nov., allotype ♀ (MNHNP). A, carapace & chelicerae, dorsal view; B, spinnerets, ventral view; C, eyes, dorsal view; D, sternum, maxillae, labium & chelicerae, ventral view; E, spermathecae; F, apical chelicerae with rastellum, ventral view. Scale line = 1mm (C, F); 2mm (A, B, D); 0.5mm (E).

anteromedially and c.20 strong but shorter in band beside caput; 3 long thick and several finer between PME, and c.8 long thick and few finer between ALE; bush of golden hairs and long curved black bristles on lateral margins. Fovea short, strongly procurved.

**Eyes.** Tubercle distinct. Group occupies 0.34 of head-width; front width, back width, length, 37:41:30. Back row straight. MOQ front width, back width, length, 27:29:19. AME:ALE:PME:PLE, 12:11:8:10. AME-AME, 0.3; AME-ALE, 0.6; ALE-ALE, 1.5; PME-PLE, 0.1; PME-PME, 1.5; ALE-PLE, 1.0.

**Chelicerae.** Many long and short black bristles mixed with light pile of silver hairs prodorsally, laterally two bands of silver hair. Rastellum a raised conical mound, apically rounded with one short conical spine and two longer on anterior distal edge. Intercheliceral tumescence absent. Furrow promargin with 1 small mixed with 6 large teeth, medially a line of 5 widely spaced small teeth extend for length of furrow.

**Labium.** 1.25 wide, 0.63 long; low; all setae similar and no pattern of positions evident. Labiosternal suture a wide low ridge.

**Maxillae.** 1.93 long in front, 2.43 long behind, 1.00 wide; with 4 pointed cuspules in inner angle, not on mound. Heel small, rounded; anterior lobe short, distinct.

**Sternum.** 3.68 long, 3.12 wide. Sigilla: posterior pair elongate oval, c.half length from margin, rest oval, marginal, small.

**Legs.** All coxae dorsally with dense bush of golden hairs, most dense on III, IV. Tibia I with very low spur, above which is pallid, unsclerotised zone; spur apically with long tapering megaspine, smaller spine below it and on corresponding position on retrolateral face. Thorn spines absent. Preening combs: 1 of 2-3 strong setae on proventrally and retroventrally on III, IV.

Medium-sized to large; carapace c.7 long. **FEMALES.** Basifemoral thorns strong and numerous on I-III and palp. Spermathecae two, each a low coniform mound, dorsally with slender stalk and apically flared to form conical saucer. **MALES.** Tibia I with very low spur, above which is pallid, unsclerotised zone; spur apically with long tapering megaspine, smaller spine below it and on corresponding position on retrolateral face. Palpal bulb squat, pyriform with sharply demarcated embolic origin for back half of bulb; embolic shaft with several fine ridges and twists to form one thin low translucent keel ending at tip. Claws with two rows of teeth on I, one row or bare on IV.

#### DESCRIPTION

##### HOLOTYPE MALE MNHNP

Carapace 6.88 long, 5.75 wide, Abdomen 6.13 long, 3.50 wide. Total length, 15.

**Colour.** Carapace brown, chelicerae orange brown, femora dark chocolate brown, patellae to tarsi yellow brown, not annulated. Abdomen entirely dark brown, save for pallid booklung covers.

**Carapace.** Pilosity: uniform pile of fine golden hairs and long black bristles; all striae, save anterior pair, indistinct, narrow. Bristles: c.5 erect black beside posterior striae; c.7 long

Scopulate areas of all metatarsi and tarsi pallid, and of metatarsi and tarsi I, II incrassate. Metatarsi I, II bowed.

	I	II	III	IV	Palp
Femur	3.38	3.22	2.88	3.78	1.56
Patella	1.88	1.72	1.47	1.69	1.00
Tibia	2.94	2.69	2.41	3.69	1.03
Metatarsus	2.03	2.00	2.38	3.72	-
Tarsus	1.16	1.16	1.09	1.28	0.69
Total	11.39	10.79	10.23	14.16	4.28

**Scopula.** Ventral tarsi I-III, metatarsi I, II, with two hair types, medially a dense wide band (tarsi) or ovoid distal area (metatarsi) of short dark hairs, beside or around that are longer less dense paler hairs. Metatarsi: I, II, oval area of shorter hairs in distal 1/3, rest for full length-distal 5/6(II), less dense, entire; III, sparse band mixed with setae in distal 1/4; IV, like III but in distal 1/6. Tarsi: I, II, medial band occupies full ventral surface and as wide as lateral bands, full, dense, entire; III, like II but with c.10 setae mixed medially in distal 1/3; IV, two sparse bands of long hairs divided by band 6-8 setae wide of thick and fine black setae.

**Spines** (including megaspines). I: fe p1, d3w, pa 0, ti p1, v8, me v1. II: fe p1, d2w, pa 0, ti p1, v8, me v2. III: fe d1, r1, pa 0, ti p2, r2, v8, me p2, r2, v5. IV: fe r1, pa 0, ti r1, v8, me r3, v7. Palp: fe p1, pa 0, ti v1.

**Claws.** 2-4 long teeth in each of 2 parallel rows (I), or with one small tooth set high in curve or bare (IV).

**Trichobothria.** Two rows, each of c.10 for 1/2 of tibiae; c.15 on metatarsi in short curving row distally forming band; no clavate and c.18 filiform on tarsi.

**Palp.** Bulb squat, pyriform with sharply demarcated embolic origin for back half of bulb; embolic shaft with several fine ridges and twists to form one thin low translucent keel ending at tip; retrolateral face of cymbium concave.

**Spinnerets.** PMS 0.40 long, 0.16 wide, 0.13 apart, c.0.23 of basal PLS in diameter, PLS length of basal, middle, apical, and total articles 0.94, 0.28, 0.13, 1.35, respectively.

#### ALLOTYPE FEMALE MNHNP

Carapace 7.31 long, 5.44 wide. Abdomen 8.44 long, 5.94 wide. Total length, 19.

**Colour.** Carapace yellow brown with darker areas along posterior margins, chelicerae orange brown, legs yellow brown, not annulated. Abdomen like ♂.

**Carapace.** Pilosity: light pile of fine gray hairs, uniformly on caput but in narrow radiating lines on thoracic region; striae distinct, broad. Bristles: no enlarged bristles beside posterior striae; c.6

long anteromedially and c.10 in band beside caput; 2 long thick and few finer between PME, and 3 long thick and several finer between ALE; light pile of short hairs and single line of short black bristles on lateral margins. Povea short, deeply procurved.

**Eyes.** Tubercle raised. Group occupies 0.31 of head-width; front width, back width, length, 80:84:60. Back row straight. MOQ front width, back width, length, 55:63:36. AME:ALE: PME:PLE, 21:22:15:22. AME-AME, 0.5; AME-ALE, 0.7; ALE-ALE, 2.1; PME-PLE, 0; PME-PME, 1.9; ALE-PLE 1.1.

**Chelicerae.** Narrow band of few long and many short black bristles prodorsally, laterally almost glabrous. Rastellum a large roundly truncate conical process evident from above, sides almost parallel, with two large conical teeth apically; c.4 tapering spines basally retrolateral of process. Furrow promargin with 7 large teeth and one smaller tooth, medially with six small teeth extending for full length and cluster of c.10 smaller teeth in basal third.

**Labium.** 1.44 wide, 0.63 long; most setae similar and in no evident pattern. Labiosternal suture a narrow shallow groove.

**Maxillae.** 2.25 long in front, 2.81 long behind, 1.28 wide; with 5 conical blunt cusps in inner angle, not on mound. Heel broadly produced; anterior lobe broad, indistinct.

**Sternum.** 3.63 long, 3.31 wide. Sigilla: posterior pair distinct, oval, 0.25 long, 0.19 from margin; other half as long, subcircular, marginal.

**Legs.** Basifemoral thorns: c.10 short prolaterally and c.6 prodorsally on I, II and palp, c.20 dorsally on III, and c.15 extending for half length on retrodorsal IV. Thorn spines absent. Preening combs: I of 2-4 strong grouped setae on retroventral III, IV.

	I	II	III	IV	Palp
Femur	4.94	4.56	4.06	5.63	3.94
Patella	3.25	3.00	2.75	3.25	2.31
Tibia	3.50	3.13	2.81	4.88	2.31
Metatarsus	2.75	2.56	2.56	4.50	-
Tarsus	1.56	1.63	1.25	1.44	1.94
Total	16.00	14.88	13.43	19.70	10.50

**Scopula.** No evident heterogeneity in scopula hair type. Metatarsi: I, II, full, dense, entire; III, in distal 1/2, mixed with setae; IV, in distal 1/6. Tarsi: I, II, full, dense, entire; III, divided by narrow setal band 2-4 wide; IV, divided by wide setal band 8-10 wide.

**Spines.** I: fe p1, d2, pa 0, ti v3, me v1w distal. II: fe p1, d2, pa 0, ti p1, v3, me v1w distal. III: fe d2, r1, pa 0, ti r2, v9, me p2, r2, v6. IV: fe d3, r1,

pa 0, ti r2, v10, me p1, r3, v14. Palp: fe p1, pa v1, ti p2, v8.

**Claws.** 2 small teeth medially (I); or bare (IV); all of similar size and extend above tufts; palpal claw very small, bare.

**Trichobothria.** Two rows, each of c.10 for 1/2 of tibiae; c.15 on metatarsi in short curving row forming band distally; no clavate and c.15 filiform on tarsi.

**Spermathecae.** Two, each a low coniform mound, dorsally with slender stalk and apically flared to form conical saucer.

**Spinnerets.** PMS 0.41 long, 0.22 wide, 0.13 apart, c.0.28 of basal PLS in diameter. PLS length of basal, middle, apical, and total articles 1.44, 0.60, 0.16, 2.20, respectively.

#### DISTRIBUTION, BURROW & HABITAT

Rainforest at an altitude of c.170m, at Rivière Bleue National Park, Province Sud, NC. The burrows were found in embankments along the roadside. The burrow entrance consists of collar extended c.1-2 cm, with a thin flap door. The burrow is slightly sinuous, sub-vertical, and without evident side branches.

#### REMARKS

There is no apparent difference between the ♂ or ♀ genitalia of the sympatric species, *B. alluviophilus* and *B. rufosemoratus*. The difference lies in the claw dentition of ♂♂, the size of the rastellum, overall size, and the abdominal pattern. Raven (1978) found a similar 'pairing' of genitalia of sympatric species of *Bymainiella* (Hexathelidae), *B. lugubris* Raven, 1978 and *B. polesoni* Raven, 1978, in which the somatic morphology alone was also diagnostic.

The two sympatric species are readily distinguished by their burrows. The thicker plug door of *B. alluviophilus* is better suited to the flood-prone plains beside the river.

#### *Barychelus* Simon, 1889

*Barychelus* Simon, 1889a, p. 245; 1892, p. 120; 1903, p. 911; Roewer, 1942, p. 213; Bonnet, 1955, p. 850; Brignoli, 1983, p. 129; Raven, 1985b, p. 114; Platnick, 1989, p. 92.

#### TYPE SPECIES

*Barychelus badius* Simon, 1889, by monotypy.

#### DIAGNOSIS

Differs from *Barycheloides* in the half length row of basomesal teeth on chelicerae, from *Que-*

*scrypta* in few maxillary cuspules, and from other genera by the enlarged rastellar process.

#### DESCRIPTION

Large to medium-sized. FEMALE. Carapace ovate, hirsute; no enlarged setae in posterior stria region, anteromedially or foveal bristles; lateral margins hirsute, without enlarged bristles; caput arched; striae broad, shallow, glabrous; fovea broad, procurved. Eye tubercle distinct, raised; clypeus absent; strong bristles between ALE and PME. Eye group wider behind than in front, and longer than wide in front; anterior lateral eye interspace about equal to ALE-PLS distance. Area of ovate setose cuticle in front of eye group. Chelicerae stout, broad; rastellum a large strong rounded spinose process on inner corner of chelicerae; fangs strong smooth; single row of many strong teeth on cheliceral promargin; basomesally a band of small teeth and granules extends to half length of furrow. Maxillae large with few cuspules on low inner corner; anterior lobe small but with long groove; heel strongly produced in arc over labium; a small area of stout clavate setae on anterior face, below suture and distally; a few short fine setae on chelicerae may interface with it; serrula absent. Cuspule microstructure: medium c.40µm (*B. complexus*) to large, c.60µm (*B. badius*) in maximum diameter; intercrest distance, c.0.7-1µm apart; profile, bilaterally uniform balloon; ridge direction, continuous over smooth crest, like thumbprints; cuspule interspace, 2 or more diameters. Labium wide, no cuspules; separated from sternum by broad glabrous groove including two elongate raised mounds. Sternum cordate, large; body of sternum (behind suture) as long as wide; all sigilla large, oval, touching margin. Legs stout, spinose; basifemoral thorns, thorn spines and preening combs present. Scopula on metatarsi and tarsi of all legs, and tarsi of palp; scopula extends for lower 200° of diameter of metatarsi and tarsi I, II; scopula dense on I, II, more extensive on prolateral face of metatarsi I, II than retrolateral. Leg tarsi with setose mound adjacent to metatarsal joint and surrounded by glabrous groove. Claws of all legs extend above claw tufts; palpal claw much smaller. All claws with single row of medial teeth or bare. Claw tufts large, continuous with scopula. Tarsal organ small, distal, on edge of sclerotised cuticle. Trichobothria in two short basal rows on tibiae; one very short (distal half) strongly curving (dorsal to retrolateral face) on metatarsi; tarsi with Vee shaped area of two trichobothrial bands, all

	<i>Barycheloides</i>						<i>Barychelus</i>	
	<i>alluviophilus</i>	<i>chiropterus</i>	<i>concavus</i>	<i>rouxi</i>	<i>rufemoratus</i>	<i>badius</i>	<i>complexus</i>	
Size of PMS	large	large	large	large	large	absent	large	
No. maxillary cuspules	8-9	3	17-30	4-5	4-5	3	7	
Dorsal abdomen, pattern	chevrons	chevrons	chevrons	brown	black	mottled	mottled	
Ventral abdomen, pattern	pallid	pallid	pallid	brown	black	mottled	mottled	
♂ Tibial spur position	distal	?	?	distal	distal	?	?	
Tibial megaspine	long, slender	?	?	two?	long tapered	?	?	
Spur size	v. small	?	?	indistinct	v. small	?	?	
Upper megaspine	absent	?	?	absent	absent	?	?	
Tibial microspur	absent	?	?	absent	absent	?	?	
Palpal bulb	broad	?	?	simple	simple	?	?	
Keels on bulb	2 lge + many fine	?	?	1 + many fine	1 + many fine	?	?	
Embolic origin	gradual	?	?	distal	distal	?	?	
Tooth rows: leg I(IV)	1(0)	?	?	2(0/1)?	2(1)	?	?	
♀ Spermathecal lobes	1 + 1	1 + 1	1 + 1	?	1 + 1	1 + 1	1 + 1	
Spermathecae shape	lobed mound	lobed mound	lobed mound	?	lobed mound	lobed mound	lobed mound	
Rastellum	spinose process	spinose process	spinose process	low spinose process	spinose process	wide low spinose mound	conical mound	
Patellar thorns III(IV)	absent	strong	strong	absent	absent	present	present	
Basifemoral thorns I-IV	I-IV	absent	I, II?, IV	?	I-IV	I, II, IV	absent	
Tibia I cf patella	greater	less	less	?	greater	less	less	
Scopula metatarsi III(IV)	1/2(1/6)	1/2(1/8)	5/8(1/8)	1/2(1/6)	1/2(1/6)	2/5(1/4)	1/3(1/4)	
Preening combs III(IV)	as spines	absent	present	absent	pro & retro	absent	IV	
Autapomorphy						No PMS	PMS	
Habitat	rainforest	rainforest	rainforest	rainforest	rainforest	?dry forest	rainforest	
Burrow type	deep, sinuous	short, sinuous	short, sinuous	?	short, sinuous	?short, side flask?	short, sinuous	
Burrow door	thick plug	plug	concave plug	?	plug	? thick plug	plug	
Distribution	Riv. Bleue, PS	Col des Roussettes, PS	Mts Koghis, PS	Mt Humboldt, PS	Riv. Bleue, PS	'Koné, PN	Col des Roussettes, PN	

Table 14. *Barychelus* & *Barycheloides* (Barychelinae) species in New Caledonia (NC): PN, Province Nord; PS, Province Sud.



filiform. Abdomen dorsally brown with uniform white mottling; ventrally pallid with small brown areas. Spermathecae two, each of broad basal lobe with ectally directed narrower anterior lobe. PMS absent without vestige; PLS large with domed apical segment. MALES. Unknown.

#### INCLUDED SPECIES

*Barychelus badius* Simon, 1889

*Barychelus complexus* sp. nov.

#### DISTRIBUTION

Koné and Col des Roussettes (Fig. 171). Province Nord, NC.

***Barychelus badius* Simon, 1889**

(Figs 9D, 171, 179, Table 14)

*Barychelus badius* Simon, 1889a, p. 246; 1892, p. 120, figs. 109, 111, [112]; Roewer, 1942, p. 213; Bonnet, 1955, p. 850; Raven & Churchill, 1991, pp. 57, 59.

#### MATERIAL EXAMINED

TYPE. Lectotype (first designated by Raven & Churchill, 1991)♀, [male paralectotype is not congeneric, see *Encyocrypta kone* Raven & Churchill, 1991], locality label is 'Koné' but the published locality is 'Koué' [=Koné], 21°03'30"S, 164°41'30"E, coll. Bougier, MNHP.

#### DIAGNOSIS

Readily distinguished from all other New Caledonian barychelids by lacking posterior median spinnerets. The combination of maculate abdomen and broad rounded coniform rastellum is also unusual in the New Caledonian barychelids.

Large; carapace 12 long. Abdomen maculate. Rastellum rounded, coniform. Maxillae with few cuspules. PMS absent. Spermathecae: two, each of broad basal lobe with ectally directed narrower anterior lobe.

#### DESCRIPTION

##### LECTOTYPE FEMALE MNHP

Carapace 13.33 long, 11.50 wide. Abdomen 15.17 long, 11.17 wide. Total length, 28.

**Colour.** Carapace and legs orange brown; chelicerae red brown. Abdomen dorsally with uniformly and equally distributed brown markings and white mottling; ventrally pallid with brown lunate areas on inner edges of posterior booklungs and two brown curved areas medially.

**Carapace.** Bristles: several short anteromedially; cluster of 15-20 in front of AME and between ALE; group anteriorly on

island of cuticle in front of AME; uniform cover of fine brown bristles and silver hairs; absent in striae; hairs obscuring cuticle on stria edges; lateral margins with piles of silver hair. Striae distinct. Fovea broad, closed, procurved.

**Eyes.** Occupy 0.29 of head-width. Tubercle distinct raised. AME:ALE:PME:PLE, 27:25:13:21. MOQ front width, back width, length, 64:72:45. Back row procurved. Eye group front width, back width, length, 82:107:75. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.6; ALE-ALE, 1.1; ALE-PLE, 1.3; PME-PLE, 0.2; PME-PME, 2.1.

**Chelicerae.** Short, broad, rounded; fine black bristles on prodorsum and fine silvery hairs. Rastellum a strong rounded coniform mound with many short conical spines reaching to ventral edge. Promargin of furrow with 10 large teeth, basomesally with 15 small teeth.

**Labium.** 1.17 long, 2.50 wide; suture is two raised narrow sigilla separated by narrow groove.

**Maxillae.** 4.08 long in front, 5.67 long behind, 2.58 wide; with 3 cuspules in line on inner angle. A small area of stout clavate setae on anterior face, below suture and distally; a few short fine setae on chelicerae may interface with it. Anterior lobe distinct; heel strongly rounded laterally.

**Sternum.** 8.17 long, 6.00 wide. All sigilla oval, touching margin, and on inclined edges of sternum.

**Legs.** 3-6 basifemoral thorns on I, II, IV. Thorn spines on patellae III, IV. Preening combs absent.

	I	II	III	IV	Palp
Femur	7.67	6.33	5.83	9.67	6.50
Patella	5.67	5.17	5.00	5.83	4.50
Tibia	5.33	4.67	3.67	6.17	3.67
Metatarsus	4.50	4.33	5.33	8.33	-
Tarsus	2.33	2.17	2.17	3.00	3.83
Total	25.50	22.67	22.00	33.00	18.50

**Scopula.** Metatarsus, tarsus: I, entire, full; entire, full; II, entire, full; entire, full. Metatarsi; III, in distal 2/5, mixed with setae; IV, in 3 bands in distal quarter. Tarsi: III, full, dense, divided by setal band 2-3 wide; IV, full, broadly divided by band of strong setae 6-8 wide.

**Spines.** I: fe d2, pa 0, ti p1 v1, me 0. II: fe p1, pa 0, ti v2, me v1. III: fe p1, r1, pa p4 r1, ti p2, r2, v7, me p6, r3, v6. IV: fe r1, pa r1, ti r2, v7, me p5, r3, v10. Palp: fe p1 d2, pa 0, ti p2 v7, ta 0.

**Trichobothria.** c.10 for 2/3 of length of each tibiae; metatarsi with c.25; tarsi with c.30-40, all filiform.

**Claws.** 1 short tooth (I) or bare (IV, palpal); palpal claw short, enclosed by tufts.

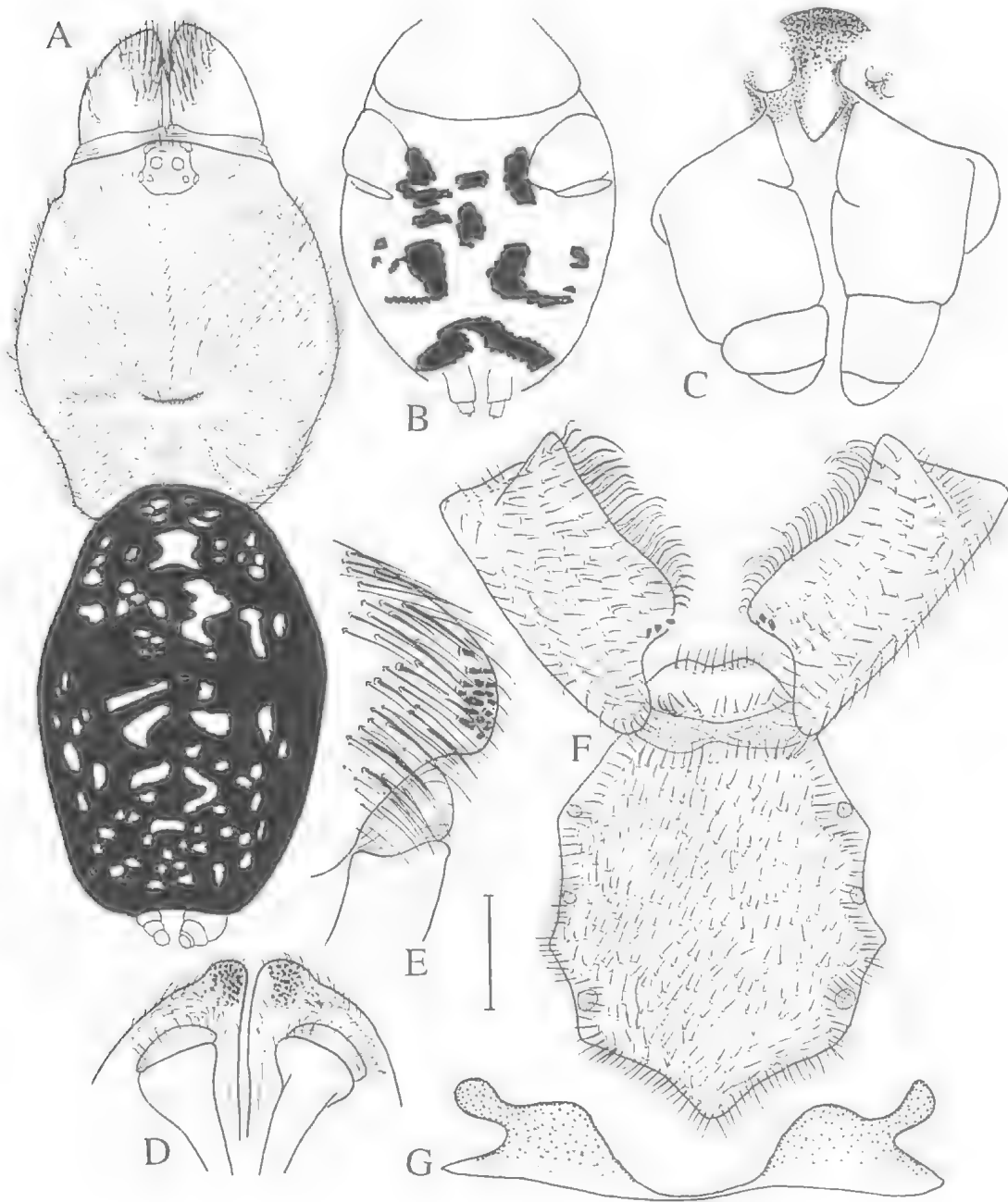


FIG. 179. *Barychelus badius*, lectotype ♀ (MNHN). A, carapace, chelicerae & abdomen, dorsal view; B, abdomen, ventral view; C, spinnerets, ventral view; D, E, apical chelicerae with rastellum, ventral (D), retrolateral view (E); F, sternum, maxillae & labium, ventral view; G, spermathecae, ventral view. Scale line  $\approx 4\text{mm}$  (A, B),  $2\text{mm}$  (F),  $1\text{mm}$  (C, D),  $1.2\text{mm}$  (E),  $0.5\text{mm}$  (G).

*Spinnerets*. PMS entirely absent. Basal, middle, apical, and total articles of PLS 1.80, 0.76, 0.36, 2.90 long, respectively.

*Spermathecae*. Two, each of broad basal lobe with ectally directed narrower anterior lobe.

#### DISTRIBUTION

The type locality, 'Koné' (also see Raven & Churchill, 1991).

#### REMARKS

The concept of the genus *Barychelus* was confused by Simon's original inclusion of a ♀ and ♂ syntypes. On examination, these proved to belong to different genera. There is no doubt that the specimens now labelled *Barychelus badius* are the those which Simon saw. Also, Simon (1889a) described both in the original description and did not, as sometimes was the case, add extra material later. Raven & Churchill (1991) addressed part of the problem in their revision of *Encyocrypta*. The ♂ lacks the rastellar mound that is evident both in ♀ and ♂♂ of its sister group, *Barycheloides*. Simon (1889a) did not mention the rastellum of the ♂ and presumably dismissed the difference as sexual dimorphism. I have every reason to believe that the ♂ in the vial is that referred to by Simon and no ♂♂ of *Barychelus* are known at all. To maintain nomenclatural stability, Raven & Churchill (1991) designated the ♀ as the lectotype. Even though the ♂ is consequentially a paralectotype, it was placed as a new species of *Encyocrypta* *kone* Raven & Churchill.

The confusion, however, does not end there. Simon (1889a, 1892) diagnosed *Barychelus* on a composite of characters from the ♂ and ♀. Simon (1892) figured the rastellum and eyes of the ♀ but the four spinnerets of the ♂. Only in the ♂ are four spinnerets evident. The ♀ has only two spinnerets; there is no indication of any kind of the posterior median spinnerets. Hence, the genus is newly re-diagnosed. My initial concern was that Simon would not have failed to notice the missing posterior median spinnerets. However, at the time, no mygalomorphs known had less than 4 spinnerets; *Barychelus* was the first. Raven (1985b) noted a similar spinneret oversight in the African genus *Pisenor* Simon, 1892.

Barychelids lacking posterior median spinnerets are common in northern and western Australia, India and Africa. However, despite the rich diversity of barychelids in New Caledonia only two species—*Barychelus badius* and *Mandjelia platnicki* have show any reduction in

the size of the posterior median spinnerets. No further material of *B. badius* has been found despite several attempts to find it near the type locality, Koné. Given the fact that most species of New Caledonian barychelids are also known only from rainforest, new material of *B. badius* may be more profitably sought in relictual non-rainforest habitats. In February 1993, careful searches in several areas around Koné were repeated. In open burnt ground south of Koumac and in a riverine open *Melaleuca* grassland near les Grottes d'Adio, empty burrows of a barychelid were found. In the former, the burrow was short and the door flush with the ground, as in *B. complexus* (Fig. 22G). In the latter, the burrow was open with a short sideshaft like that described for *Tritume* and *Idiommatia* (Fig. 22E).

In any case, *B. badius* is the only barychelid species known from the island in which posterior median spinnerets are absent. Its significance as the type species of the type genus of the family, coupled with the lack of ♂♂, makes its rediscovery very important. This is the largest known mygalomorph spider on New Caledonia.

#### *Barychelus complexus* sp. nov.

(Figs 9E, F, 122C, 13S, 171, 180, Table 14)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Col des Roussettes, 21°27'S 165°28'E, in rainforest at 490m, Province Nord, NC, 8 Sep 1990, RR, QMS17802.

#### DIAGNOSIS

Differs from *Barycheloides* in the maculate abdominal pattern and the less pronounced rastellum and from *Nutgeorgia* in the smaller palpal claw of ♀♀. Females differ from those of *B. badius* in the well developed posterior median spinnerets.

#### ETYMOLOGY

From the Latin indicating the ambiguous and complex relationships of this species.

#### DESCRIPTION

##### HOLOTYPE FEMALE QMS17802

Carapace 6.25 long, 5.50 wide. Abdomen 7.81 long, 5.31 wide. Total length, 17.

*Colour*. Carapace, chelicerae, and legs orange brown, legs banded. Abdomen dorsally brown with extensive areas of large white mottling; ventrally pallid but for brown marks on inner edges of posterior booklungs and irregular brown areas medially and in front of PMS.

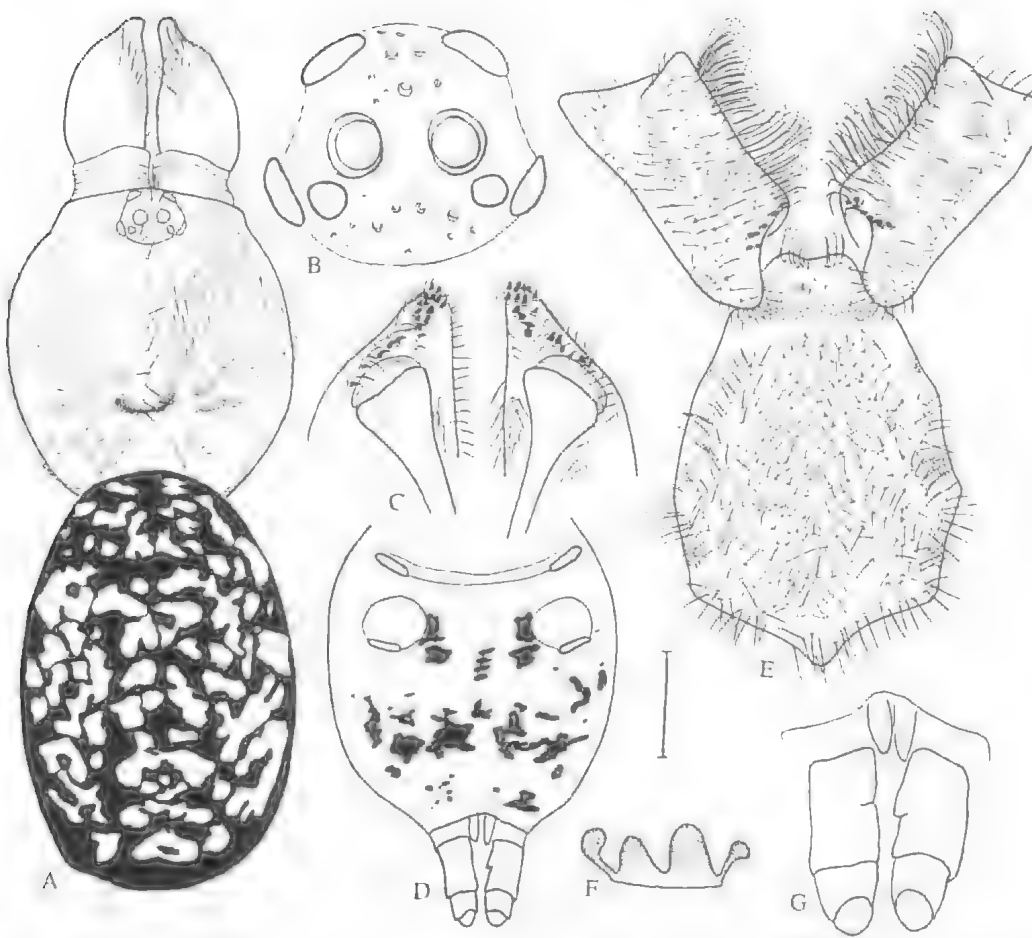


FIG. 180. *Barychelus complexus* sp. nov., holotype ♀ (QMS17802). A, carapace, chelicerae & abdomen, dorsal view; B, eyes, dorsal view; C, apical chelicerae with rastellum, ventral view; D, abdomen, ventral view; E, sternum, maxillae & labium, ventral view; F, spermathecae; G, spinnerets, ventral view. Scale line = 1mm (C, E, G); 2mm (A, D); 0.5mm (B, F).

**Carapace.** Caput strongly arched. Bristles: light cover of short black on caput, lines of brown hairs on interstrial ridges; striae shallow, indistinct, narrow; 1-3 longer black beside posterior striae; c.10 thick anteromedially and band of 10-12 thick on each side of caput; 5 long thick and 10-12 finer between PME, and 5 long thick and several finer between ALE; line of fine hairs on lateral margins, few black bristles near posterior corner. Fovea straight with procurved ends.

**Eyes.** Tubercle distinct. Back row procurved. Group occupies 0.28 of head-width; front width, back width, length, 62, 86, 58, respectively. MOQ front width, back width, length, 50, 60, 30, respectively. AME:ALE:PME:PLE, 20:23:11:21. Eye interspaces: AME-AME, 0.7; AME-

ALE, 0.8; ALE-PLE, 1.3; PME-PME, 1.9; PME-PLE, 0.2. ALE-ALE, 1.2.

**Chelicerae.** Strong; narrow band of many short and few moderately long black bristles prodorsally, laterally almost glabrous save for band of fine setae. Rastellum a large ridge extending from anterior-most point of chelicera down to fang where it appears as a large coniform process bearing 15-20 short stout conical spines on its apex and fewer spines on its lower surface and lateral of it. Furrow short, promargin with 5 large mixed with 5 smaller teeth, basomesally with 7 small teeth reaching to half length of furrow and c.10-12 smaller teeth basal to those. No modifications between chelicerae.

**Labium.** 0.50 long, 1.00 wide. Labiosternal suture is two tear-shaped sigilla medially joined in narrow groove.

**Maxillae.** 1.72 long in front, 2.56 long behind, 1.00 wide; with 7 blunt along in inner edge. Heel distinct, angular, produced posteriorly; anterior lobe small, indistinct.

**Sternum.** 3.56 long, 2.75 wide. Sigilla all oval, marginal, indistinct.

**Legs.** 11-15 spines on patellae III, 12 on patellae IV and irregular 'comb' of weak bristles distal on femora III, IV. Basifemoral thorns absent. Preening combs: 1 of 3 strong setae on retroventral IV. Femora laterally with uniform cover of fine black setae.

	I	II	III	IV	Palp
Femur	3.31	3.19	3.06	4.38	2.63
Patella	2.50	2.50	2.13	2.63	2.00
Tibia	2.00	1.94	1.75	2.56	1.31
Metatarsus	1.50	1.50	2.00	3.56	-
Tarsus	1.06	1.13	0.88	1.38	1.69
Total	10.37	10.26	9.82	14.51	7.63

**Scopula.** Metatarsi and tarsi: I, II, full, dense, entire. Metatarsi: III, mixed with setae in distal third; IV, in two narrow triangles in distal quarter. Tarsi: III, dense, narrowly divided by setal band 2-6 wide, setal band widens fast distally; IV, divided by setal band 8-12 wide.

**Spines.** Femora with many strong black bristles dorsally; strong spine group prolaterally on metatarsi IV; lateral spines on tibia and metatarsi III, IV short conical. I: fe p1, d4w, pa 0, ti v1w, me 0. II: fe p1, d2w, pa 0, ti p1, v0, me 0. III: fe p2, d3w, r3, pa p11 thorn spines, r2, v1, ti p3, r3, v8, me p5, r4, v8. IV: fe d3w, r1, pa p12 thorns, r2, v2, ti p2, r2, v10, me p7, r4, v9. Palp: fe p1 d3w, pa v2, ti p3, v6.

**Spermathecae.** Two low coniform domes each with a long lateral (ectal) lobe apically enlarged; lateral lobe only as high as mesal lobe.

**Claws.** Two small teeth on outer faces in medial keel (I) or bare (IV); palpal claw small, bare. Two small clusters of scopula hairs above claws on I, less distinct on other legs.

**Trichobothria.** Two rows, each of c.10 for two-thirds of tibiae; c.17 on metatarsi in long curving row; c.3 clavate and c.14 filiform on tarsi.

**Spinnerets.** PMS 0.48 long, 0.19 wide, 0.06 apart, and c.0.31 of basal PLS in diameter. Basal, middle, apical, total segments of PLS, 1.05, 0.34, 0.33, 1.72 long, respectively.

#### DISTRIBUTION, BURROW & HABITAT

Rainforest at 490m altitude at Col des Roussettes, Province Nord, NC. The burrow is short with a thick plug door.

#### *Encyocrypta* Simon, 1889

*Encyocrypta* Simon, 1889a, p. 247; Rainbow, 1912, p. 114; Roewer, 1942, p. 215; Bonnet, 1956, p. 1655; Main, 1982, p. 588; Main, 1985, p. 12; Brignoli, 1983, p. 130; Raven, 1985b, p. 152; Platnick, 1989, p. 93; Raven & Churchill, 1991, p. 35; Platnick, 1993, p. 96.

#### TYPE SPECIES

*Encyocrypta meleagris* Simon, 1889, by monotypy.

#### DIAGNOSIS

Differs from *Ozicrypta* in the straight fovea and well developed posterior median spinnerets, and from *Seqocrypta* in the well developed tibial spur in ♂♂.

#### DESCRIPTION

Carapace rounded, hirsute. Fovea short, straight to slightly procurved. Clypeus absent. Eyes on tubercle in 3 rows. Rastellum present or absent. Lyra absent. Maxillae with 1-30 cuspules grouped on inner corner, heel slightly produced, anterior lobes rounded. Cuspule microstructure: c.40-50µm in maximum diameter; interest distance, 0.5-1µm apart; profile, bilaterally uniform balloon; ridge direction, continuous over smooth crest, like thumbprints; cuspule interspace, 2 or more diameters. Rastellum weak to absent. Labium wider than long, without cuspules. Sternum cordate, always clearly longer than wide, 3 pairs of round marginal sigilla. Preening combs present or absent on metatarsi III and IV. Dorsal and ventral abdomen usually mottled, rarely uniform in colour. Four spinnerets; PMS c.0.25 width of PLS. FEMALES. Few spines on I, II. Scopula entire on metatarsi and tarsi I and II; thin and divided by setae, if present, on metatarsi III and IV; scopula extends for lower c.200° of metatarsal and tarsal diameters; scopula not continuous with claw tufts; claw tufts moderately large, iridescent green; scopula more extensive on prolateral face of metatarsi I, II than retrolateral. Legs I, II as thick or thicker than II, IV. Palp with well developed claw tufts; palpal claw small to well developed, edentate. Spermathecae consist of two pairs of dimorphic lobes arising from separated basal mounds. MALES. Claws with two rows of teeth (I), and 1-2 rows (IV). Tibia I with ventral distal spur and often with up-curved megaspine with small microspur and slender down-curved megaspine laterally. Palpal bulb pyriform with short distal keel on embolus.

	<i>abelardi</i>	<i>aureco</i>	<i>berlandi</i>	<i>bertini</i>	<i>bouleti</i>	<i>cagou</i>	<i>colemani</i>	<i>decocki</i>	<i>djiaouma</i>	<i>eneseff</i>	<i>gracilibulba</i>
Maxillary cuspules cf 13	less	less	more	less	less	less	less	less	less	less	less
♂ Tibial spur position	subdistal	subdistal	?	?	?	?	?	?	?	distal	v subdistal
Tibial megaspine	long sinuous	short curved	?	?	?	?	?	?	?	short straight	long slender
Spur size	small	slender	?	?	?	?	?	?	?	low conical	short cone
Upper megaspine	absent	long	?	?	?	?	?	?	?	short straight	absent
Tibial microspur	absent	long lobe	?	?	?	?	?	?	?	triangular	absent
Keels on bulb	one distal long	low	?	?	?	?	?	?	?	1 long, 1 short	long distal
Embolus origin	distal	gradual	?	?	?	?	?	?	?	gradual	distal
Tooth rows: legs I(IV)	2(1)	2(1)	?	?	?	?	?	?	?	1(1)	2(2)
♀ Spermathecal lobes	1 + 1	?	1 + 1	1 + 1	1 + 1	1 + 1	1 + 1	1 + 1	1 + 1	?	1 + 1
Spermathecae shape	antenn. domes	?	antenn. domes	antenn. domes	antenn. domes	antenn. domes	lobed dome	cactoid lobes	lobed dome	?	antenn. domes
Basifemoral thorns	I, II, IV	?	absent	absent	absent	absent	absent	I, II, IV	absent	?	weak
Leg IV claws	toothed	?	bare	toothed	toothed	toothed	toothed	toothed	toothed	?	toothed
Legs banded	no	no	no	no	lightly	distinct	no	no	no	dark	no
Scopula metatarsi III(IV)	4/5(1/7)	1/2(1/8)	1/2(1/5)	1/3(1/4)	1/2(1/5)	1/2(1/5)	1/2(1/5)	1/3(1/6)	>absent	1/2(1/5)	1/2(1/3)
Preening combs III(IV)	present	weak	present	absent	absent	weak	present	present	present	absent	IV
Habitat	rainforest	rainforest	rainforest	rainforest	maritime rainforest	rainforest	rainforest	rainforest	rainforest	rainforest	rainforest
Burrow type	open tube	open tube	? litter barrel	open tube	short tube	short tube	?	? litter barrel	?	?	short tube
Burrow door	none	none	?	thin	thin	thin	?	?	?	?	thin
Distribution in NC	Mt de Sources, PS	Col d'Amieu, PS	Col des Roussettes, SNC	Mandjelia, PN	Port Boise, PS	Riv. Bleue, PS	Mts Koghis, PS	Riv. des Piroques, PS	Mt Djiaouma, PS	Mt Do, PS NC	Mt de Sources, PS

Table 15. *Encyocrypta* species (part 1) in New Caledonia: PN, Province Nord; PS, Province Sud.

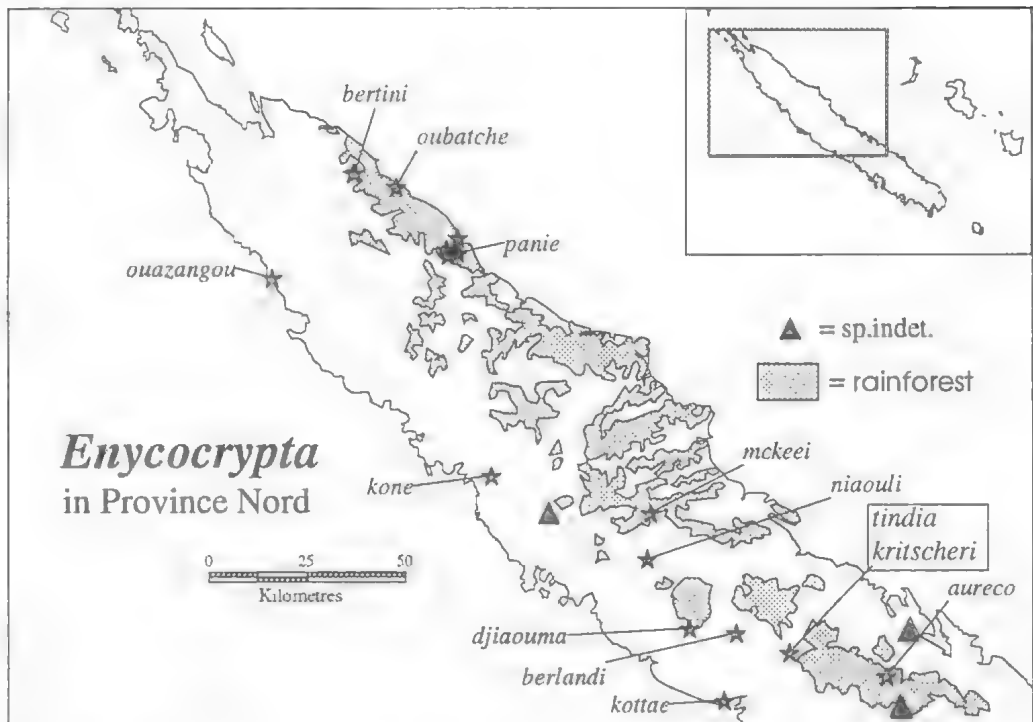
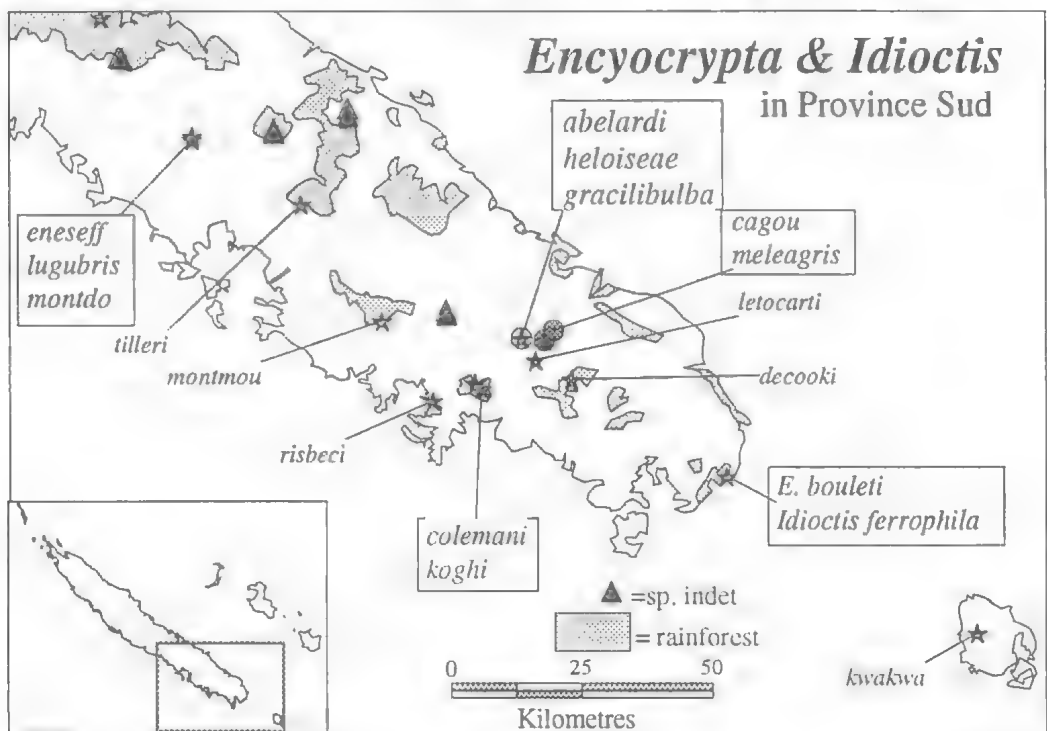
	<i>grandis</i>	<i>heloisae</i>	<i>koghi</i>	<i>kone</i>	<i>kottae</i>	<i>krischeri</i>	<i>kwakva</i>	<i>leiocari</i>	<i>lugubris</i>	<i>mckeei</i>
Maxillary cuspules cf 13	less	less	more	more	less	less	less	less	much more	less
♂ Tibial spur position	?	?	distal	post distal	?	subdistal	distal	subdistal	?	?
Tibial megaspine	?	?	long curved	long curved	?	stout	short strong	long strong	?	?
Spur size	?	?	low broad	short slender	?	stout	short broad	long conical	?	?
Upper megaspine	?	?	absent	absent	?	short	short curved	short straight, set low	?	?
Tibial microspur	?	?	absent	absent	?	domed	minute	absent	?	?
Keels on bulb	?	?	many fine	absent	?	1 & 1 long	3-4	1 low	?	?
Embolus origin	?	?	distal	gradual	?	gradual	distal	gradual	?	?
Tooth rows: legs I(IV)	?	?	2(1)	2(2)	?	2(2)	2(1)	2(1)	?	?
♀ Spermathecal lobes	2 + 2	2 + 2	?	?	1 + 1	?	?	1 + 1	1 + 1	1 + 1
Spermathecae shape	simple	simple	?	?	lobed dome	?	?	lobed mound	lobed mound	lobed mound
Basifemoral thorns	absent	I, II, IV	?	?	absent	?	?	absent	I, II, IV	absent
Leg IV claws	toothed	toothed	?	?	toothed	?	?	bare	bare	toothed
Legs banded	no	strong	no	no	no	present	no	no	no	no
Scopula metatarsi III(IV)	1/2(1/5)	3/5(1/4)	1/3(1/6)	1/2(1/4)	1/2(1/4)	1/3(1/6)	1/2(1/5)	1/2(1/5)	1/3(absent)	1/2(1/5)
Preening combs III(IV)	absent	present	present	present	absent	absent	present	present	present	present
Habitat	rainforest	rainforest	rainforest	maritime	rainforest	rainforest	><rainforest	rainforest	rainforest	rainforest
Burrow type	large barrel	short tube	?	?	short tube	?	litter barrel	tube	litter	short tube
Burrow door	2 end doors	thin	?	thin	thin	?	2 end doors	thin	thin	thin door
Distribution	Mandjelia, PN	Mt des Sources, PS	Mts Koghis, PS	'Kone', PN	E of Bourail, PS	Tindia, PN	Ile de Pins	Riv Blanche, PS	Mt Do, PS	Mt Aou-pinié, PN

Table 15. *Encyocrypta* species (part 2) in New Caledonia: PN, Province Nord; PS, Province Sud.



	<i>meleagris</i>	<i>montido</i>	<i>montmou</i>	<i>neocaledonica</i>	<i>nlaouli</i>	<i>oubatche</i>	<i>ouazangou</i>	<i>panie</i>	<i>risbeci</i>	<i>tillieri</i>	<i>tindia</i>
Maxillary cuspules cf 13	less	more	more	more	less	less	less	more	less	more	less
♂ Tibial spur position	?	?	?	subdistal	?	?	distal	distal	prolateral distal	?	?
Tibial megaspine	?	?	?	stout pair	?	?	long strong	long curved	long curved	?	?
Spur size	?	?	?	stout	?	?	short conical	raised	conical	?	?
Upper megaspine	?	?	?	absent	?	?	slender strong	absent	absent	?	?
Tibial microspur	?	?	?	absent	?	?	><absent	absent	absent	?	?
Keels on bulb	distal low	?	?	I strong	?	?	I low	2 low	2 low	?	?
Embolic origin	distal	?	?	distal	?	?	gradual	gradual	gradual	?	?
Tooth rows: legs I(IV)	?	?	?	2(2)	?	?	2(0)	2(2)	2(2)	?	?
♀ Spermathecal lobes	2 + 2	2 + 2	1 + 1	?	2 + 2	2 + 2	?	1 + 1	?	2 + 2	1 + 1
Spermathecae shape	simple lobes	lobes	lobed mound	?	simple lobes	simple lobes	?	lobed mound	?	lobed mound	lobed mound
Basifemoral thorns	absent	I, II, IV	absent	?	absent	absent	?	absent	?	absent	absent
Leg IV claws	toothed	toothed	toothed	?	toothed	toothed	?	toothed	?	toothed	toothed
Legs banded	no	no	no	no	yes	yes	no	no	no	no	no
Scopula metatarsi III(IV)	1/6	><absent	1/6(absent)	1/3(1/4)	1/3(1/6)	1/3(absent)		1/4(absent)	1/3(1/6)	1/4-(absent)	1/2(1/5)
Preening combs III(IV)	present	present	present	present	present	absent	absent	absent	present	present	present
Habitat	rainforest	rainforest	rainforest	?	<i>Melaleuca</i> forest	riverine forest	thicket	rainforest	?	rain-forest	?
Burrow type	litter barrel	?	?	?	?	short tube	?	short tube	?	?	?
Burrow door	2 end-doors	?	?	?	?	none	?	thin	?	?	?
Distribution	Riv. Bleue, PS	Mt Do, PS	Mt Mou, PS	?	PN	Oubatche, PN	Ouazangou-Tom, PN	Mt Panité, PN	?Nouméa, PS	Dent de St Vin-cent, PS	Tindia, PN

Table 15. *Encyocrypta* species (part 3) in New Caledonia: PN, Province Nord; PS, Province Sud.

FIG. 181. Records of *Encyocrypta* in northern New Caledonia with rainforest areas shaded.FIG. 182. Records of *Encyocrypta* and *Idiocris ferrophila* in southern New Caledonia with rainforest areas shaded.

## DISTRIBUTION &amp; HABITAT

*Encyocrypta* is the most widespread mygalomorph genus on New Caledonia; it appears to be endemic to the island and adjacent island provinces. It is common in rainforest, very rare if not absent in maquis (heath), but occurs in open low sclerophyllous forest, even in stony soils and from the splash area in the littoral zone through to the highest mountain at 1600m, Mt Panié.

## INCLUDED SPECIES

*Encyocrypta meleagris* Simon, 1889  
*Encyocrypta abelardi* sp. nov.  
*Encyocrypta aureco* Raven & Churchill, 1991  
*Encyocrypta berlandi* Raven & Churchill, 1991  
*Encyocrypta bertini* sp. nov.  
*Encyocrypta bouleti* sp. nov.  
*Encyocrypta cugou* Raven & Churchill, 1991  
*Encyocrypta colemani* Raven & Churchill, 1991  
*Encyocrypta decooki* Raven & Churchill, 1991  
*Encyocrypta djiaouma* Raven & Churchill, 1991  
*Encyocrypta eneseff* Raven & Churchill, 1991  
*Encyocrypta gracilibulba* sp. nov.  
*Encyocrypta grandis* sp. nov.  
*Encyocrypta heloiseae* sp. nov.  
*Encyocrypta koghi* Raven & Churchill, 1991  
*Encyocrypta kone* Raven & Churchill, 1991  
*Encyocrypta kottae* Raven & Churchill, 1991  
*Encyocrypta kritscheri* Raven & Churchill, 1991  
*Encyocrypta kwakwa* sp. nov.  
*Encyocrypta letocarti* Raven & Churchill, 1991  
*Encyocrypta lugubris* Raven & Churchill, 1991  
*Encyocrypta mckeei* sp. nov.  
*Encyocrypta montdo* Raven & Churchill, 1991  
*Encyocrypta montmou* Raven & Churchill, 1991  
*Encyocrypta neocaledonica* Raven & Churchill, 1991  
*Encyocrypta niaouli* Raven & Churchill, 1991  
*Encyocrypta oubatche* Raven & Churchill, 1991  
*Encyocrypta ouazangou* sp. nov.  
*Encyocrypta panie* Raven & Churchill, 1991  
*Encyocrypta risbeci* sp. nov.  
*Encyocrypta tindia* Raven & Churchill, 1991  
*Encyocrypta tillieri* Raven & Churchill, 1991

## REMARKS

*Ozicrypta* retains a wide sternum, parsimoniously plesiomorphic for the family, as further indicated by spiderlings and juveniles, in contrast to the longer sternum of *Encyocrypta*. Female *Encyocrypta* retain a plesiomorphic unmodified transverse straight fovea but in *Ozicrypta* species the fovea is distinctly procurved. Each species is endemic to small areas.

*Encyocrypta abelardi* sp. nov.

(Figs 182-184, Table 15)

## MATERIAL EXAMINED

TYPES. Holotype ♂, Montagne des Sources, 22°09'S 166°35'E, Province Sud, NC, rainforest, at c.900m altitude, 5 Sep 1990, RR, QMS17781; ♂, same data, QMS17780; ♀ allotype, same locality, heath ecotone, in bank, QMS17783.

## DIAGNOSIS

Differs from ♀♀ of *E. heloiseae* by lacking leg annulations and from *E. neocaledonica* in the more slender tibial spur and single megaspine and also in having only one row of teeth on the claws of IV. Females differ from the sympatric *E. heloiseae* in lacking banding on legs, and from *E. gracilibulba* in the abdomen being pallid ventrally and in the long, lateral lobe of the spermathecae.

Maxillae with less than 13 cuspules on average of both. Preening combs present. FEMALES. Claws of IV with teeth on outer face. Basifemoral thorns on I, II, IV. Scopula for distal 1/7 of metatarsi IV; distal 2/5 of metatarsi III. Abdomen dorsally dark brown with large white mottling forming herring bone effect; ventrally pallid with light brown markings with posteriorly and centrally. Legs not annulated. Spermathecae a pair of low domed mounds with outer lateral slender lobes clearly higher than mounds and with apical expansion. MALES. Claws with one row (IV) of teeth and two rows on I. Scopula in distal 1/5 of metatarsi IV; distal 2/5 of metatarsi III. Tibia I with small spur set back from distal edge and proventral capped with long sinuous megaspine; microspur and megaspine absent; bulb pyriform with long gently tapering embolic origin; embolus distally with one twisted flange; cymbium dimorphic, viewed dorsally both faces convex.

## ETYMOLOGY

For Peter Abelard, 1079-1144, French Aristotelian logician, moral philosopher, poet and theologian.

## DESCRIPTION

HOLOTYPE MALE QMS17781

Carapace 6.63 long, 5.94 wide. Abdomen 6.13 long, 4.06 wide. Total length, 14.

*Colour*. Carapace yellow brown with darker areas but no reticulations on interstrial ridges and caput, chelicerae light orange brown, and legs yellow brown without annulations. Abdomen dorsally brown with moderately large white spots

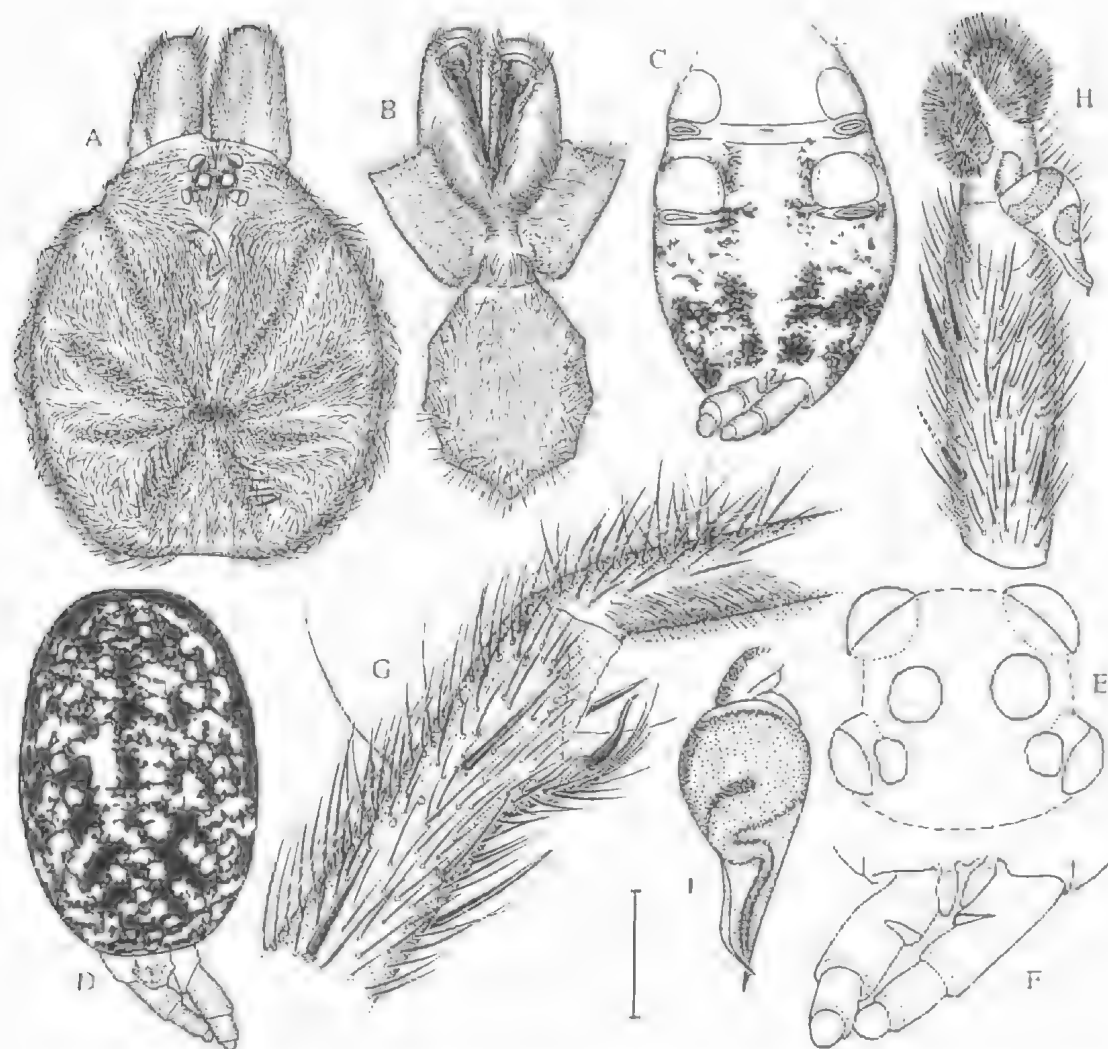


FIG. 183. *Encyocrypta abelardi* sp. nov., holotype ♂ (QMS17781). A, carapace & cheliceræ, dorsal view; B, cheliceræ, sternum, maxillae & labium, ventral view; C, D, abdomen, dorsal (D), ventral view (C); E, eye group, dorsal view; F, spinnerets, ventral view; G, tibia & metatarsus I, prolateral view; H, cymbium & palpal bulb, ventral view; I, palpal bulb, ventral view. Scale line = 2mm (A-D); 1mm (F-H); 0.5mm (E, I).

centrally; ventrally pallid with small brown areas along edges of posterior booklungs and forming narrow brown Vee in front of spinnerets.

**Carapace.** Pileosity: dense pile, in places obscuring cuticle, of long brown wavy hairs and uniform cover of fine black bristles on caput, along margins, and on interstitial ridges; striae distinct, narrow. Bristles: few fine erect black beside posterior striae; 10-12 anteromedially and narrow band beside caput, 8-10 long and several finer between PME, and c.6 long and few finer between ALE; moderately dense bush of long hairs and 3-5 bands of long black bristles on

lateral margins. Fovea short, filled with hair, straight.

**Eyes.** Tubercle distinct. Group occupies 0.28 of head-width. Back row slightly recurved. Eye group front width, back width, length, 38, 44, 34, respectively. MOQ front width, back width, length, 29, 30, 22, respectively. AME:ALE:PME:PLE, 12:15:9:11. Eye interspaces: AME-AME, 0.6; AME-ALE, 0.4; ALE-PLE, 0.8; PME-PME, 1.5; PME-PLE, 0.1; ALE-ALE, 1.2.

**Cheliceræ.** Prodorsal surface rubbed bare, laterally a band of hairs and bristles. Rastellum and mound absent. Furrow promargin with 9

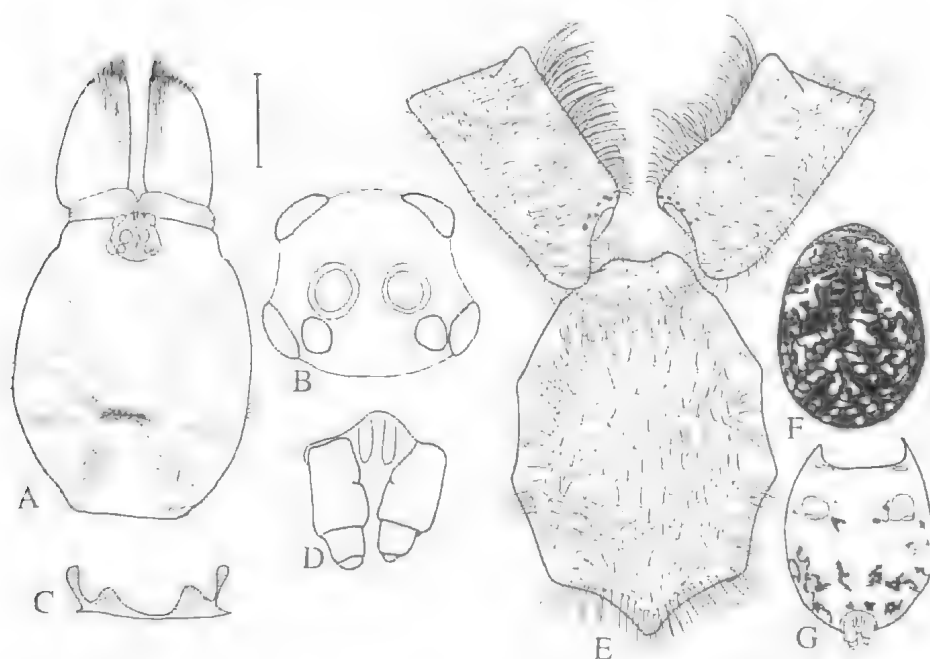


FIG. 184. *Encycrypta abelardi* sp. nov., allotype ♀ (QMS17783). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, spermathecae; D, spinnerets, ventral view; E, sternum, maxillae & labium, ventral view; F, G, abdomen, dorsal (F), ventral view (G). Scale line = 1 mm (D, E); 2 mm (A); 4 mm (F, G); 0.5 mm (B, C).

moderately large teeth, basomesally with 1 small tooth. At mid-height of chelicera, a large pallid mottled triangle on each surface.

**Labium.** 0.32 long, 1.04 wide. Labiosternal suture two broad separated shallow sigilla.

**Maxillae.** 1.68 long in front, 2.28 long behind, 0.96 wide; with 8-9 cuspules in inner angle. Heel small, rounded; anterior lobe, pointed, distinct.

**Sternum.** 3.60 long, 2.88 wide. Sigilla all small, oval, marginal, with longer axis parallel to adjacent margin.

**Legs.** Tibia I with small spur set back from distal edge and proventral capped with long sinuous megaspine; microspur and megaspine absent. Thorn spines absent. Femora with dense pile of long grey brown hairs dorsally and lighter pile laterally. Preening combs: 1 of 3 thin weak setae on retroventral IV.

	I	II	III	IV	Palp
Femur	6.06	5.69	5.13	6.75	3.44
Patella	3.63	3.25	2.63	3.00	2.06
Tibia	4.81	4.50	3.75	5.81	2.19
Metatarsus	4.19	4.19	4.63	7.00	-
Tarsus	2.13	2.25	2.00	2.50	1.38
Total	20.82	19.88	18.14	25.06	9.07

**Scopula.** Metatarsi (longest on prolateral face, crossing diagonally over ventral face to short

retrolateral portion): I, II, full, long hairs, moderately dense, not obscuring cuticle, entire; III, two wide triangles in distal 2/5; IV, two narrow sparse triangles in distal 1/5. Tarsi: I, II, full, dense, entire; III, dense, entire, save for two lines of pallid setae not parting hairs; IV, cuticle pallid ventrally, narrowly divided setal band 2-4 wide.

**Spines.** I: fe p2, d5, r1, pa 0, ti p2, v6 + megaspine; me v1 basal. II: fe p3, d4, r2, pa 0, ti p2, v8, me v1 basal. III: fe p3, d4, r3, pa p2, ti p2, r1, v8, me p4, r3, v5. IV: fe p3, d5, r3, pa 0, ti p2, r3, v9, me p4, r3, v7. Palp: fe p1, d4, pa 0, ti p1, v5.

**Claws.** Prolateral faces (leg I) with 6 teeth, retrolateral faces with only 3 teeth; slender on IV, with 3 small teeth on outer faces.

**Trichobothria.** In two rows, each of c.12 for 3/4 of tibiae; c.19 on metatarsi in curved row distally forming 2-3 bands, proximally reaching for 3/4 of metatarsi; totally c.7 clavate, c.7 filiform on tarsi in each of two separated rows.

**Palp.** Bulb pyriform with long gently tapering embolic origin; embolus distally with one twisted flange; cymbium dimorphic, viewed dorsally both faces convex.

*Spinnerets*. PMS 0.38 long, 0.13 wide, 0.17 apart, and c.0.29 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 0.83, 0.58, 0.28, 1.69 long, respectively.

#### ALLOTYPE FEMALE QMS17783

Carapace 6.56 long, 5.13 wide. Abdomen 8.44 long, 6.25 wide. Total length, 17.

*Colour*. Carapace, legs, and chelicerae orange brown. Abdomen dorsally dark brown with large white mottling forming herring bone effect; ventrally pallid with light brown markings with posteriorly and centrally. Legs not annulated.

*Carapace*. Pilosity: uniform, light pile of fine grey hairs on caput, interstrial ridges, and lateral margins; striae narrow, distinct. Bristles: 3-6 erect black beside posterior striae; 9 long anteromedially and few thinner beside caput; 2 long and 6-10 finer with hairs between PME, and c.6 long curved and few finer between ALE; short black bristles in 2 lines in front of fovea. Fovea straight.

*Eyes*. Tubercle distinct. Group occupies 0.28 of head-width; front width, back width, length, 60, 73, 56, respectively. Back row slightly procurved. MOQ front width, back width, length, 45, 50, 31, respectively. AME:ALE:PME:PLE, 20:22:12:20. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.6; ALE-PLE, 1.0; PME-PME, 1.4; PME-PLE, 0.1; ALE-ALE, 1.4.

*Chelicerae*. Few long erect black bristles and many fine hairs prodorsally, laterally two bands of setae, a broad glabrous band and wide setose band. Rastellum only of line of short curved spine-like bristles; mound absent. Furrow promargin with 8 large mixed with 3 small teeth, basomesally with 2 small teeth and 8-10 granules.

*Labium*. 0.50 long, 1.13 wide. Labiosternal suture a continuous shallow groove.

*Maxillae*. 1.88 long in front, 2.53 long behind, 1.22 wide; with 7-8 cuspules in inner angle. Heel slightly produced; anterior lobe small indistinct.

*Sternum*. 3.66 long, 2.75 wide. Sigilla all small, oval, marginal.

	I	II	III	IV	Palp
Femur	4.63	4.00	3.50	5.38	3.44
Patella	3.25	2.81	2.38	2.81	2.25
Tibia	3.19	2.81	2.31	4.06	2.25
Metatarsus	2.56	2.44	2.75	4.81	—
Tarsus	1.56	1.44	1.19	1.56	2.00
Total	15.19	13.50	12.13	18.62	9.94

*Legs*. Thorn spines absent. 6-12 fine basifemoral thorns on I, II, IV. Covered with light pile of fine gray hairs. Preening combs: 1 of 3-4 setae on retroventral III, IV.

*Scopula*. Metatarsi and tarsi: I, II, full, dense, entire. Metatarsi: III, in distal 2/5, mixed with setae; IV, two narrow triangles in distal 1/7. Tarsi: III, dense, divided by setal band 2-6 wide; IV, divided by narrow band of setae 6-10 wide.

*Spines*. Femora I-IV with long spine basally. I: fe p1, d4, pa 0, ti p1, v3, mc v1 basal. II: fe p1, d4w, pa 0, ti p2, v4, mc v1. III: fe p3, d1w, r3, pa p2, r2, ti p2, r2, v8, mc p4, r2, v7. IV: fe d3, r1, pa 0, ti r3, v8, mc p3, r3, v8. Palp: fe p1, d4, pa v1w, ti p3, v9.

*Spermathecae*. A pair of low domed mounds with outer lateral slender lobes clearly higher than mounds and with apical expansion.

*Claws*. 2 (IV)-3 (I) teeth on outer faces; palpal claw small, bare.

*Trichobothria*. in two rows, each of c.9 for 3/4 of tibiae; c.13 on metatarsi in curved row; c.3 small clavate and 17 filiform on tarsi.

*Spinnerets*. PMS 0.68 long, 0.24 wide, 0.16 apart, and c.0.37 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.10, 0.40, 0.16, 1.66 long, respectively.

#### DISTRIBUTION, BURROW & HABITAT

The ♂♂ were taken from a high exposed embankment formed by a road bisecting rainforest. He was deep within the curtain web of the diplurid, *Stenygrocercus*. The ♀ was taken from a short burrow (5-7 cm) with a thin flap door; the burrow was in a bank in heath adjacent to rainforest. The species is known only from the Montagne des Sources, a mountain group just east of Mts Koghis.

#### REMARKS

The pilosity of the carapace of ♂♂ of this species is unusual.

#### *Encyocrypta bertini* sp. nov. (Figs 181, 185, Table 15)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Mt Mandjelia, NC, rainforest at c.750 m, 12 Sep 1990, RR, QMS17774; paratype ♀, same data, QMS17775.

#### OTHER MATERIAL EXAMINED

2 penultimate ♂♂ and one juvenile taken with types.

#### DIAGNOSIS

Females differ from those of the sympatric *E. grandis* in being half its size and amorphous lateral lobes of the spermathecae rather than the sharply defined longer lobes of *E. grandis*. They differ from *E. cagou* and *E. grandis* by having

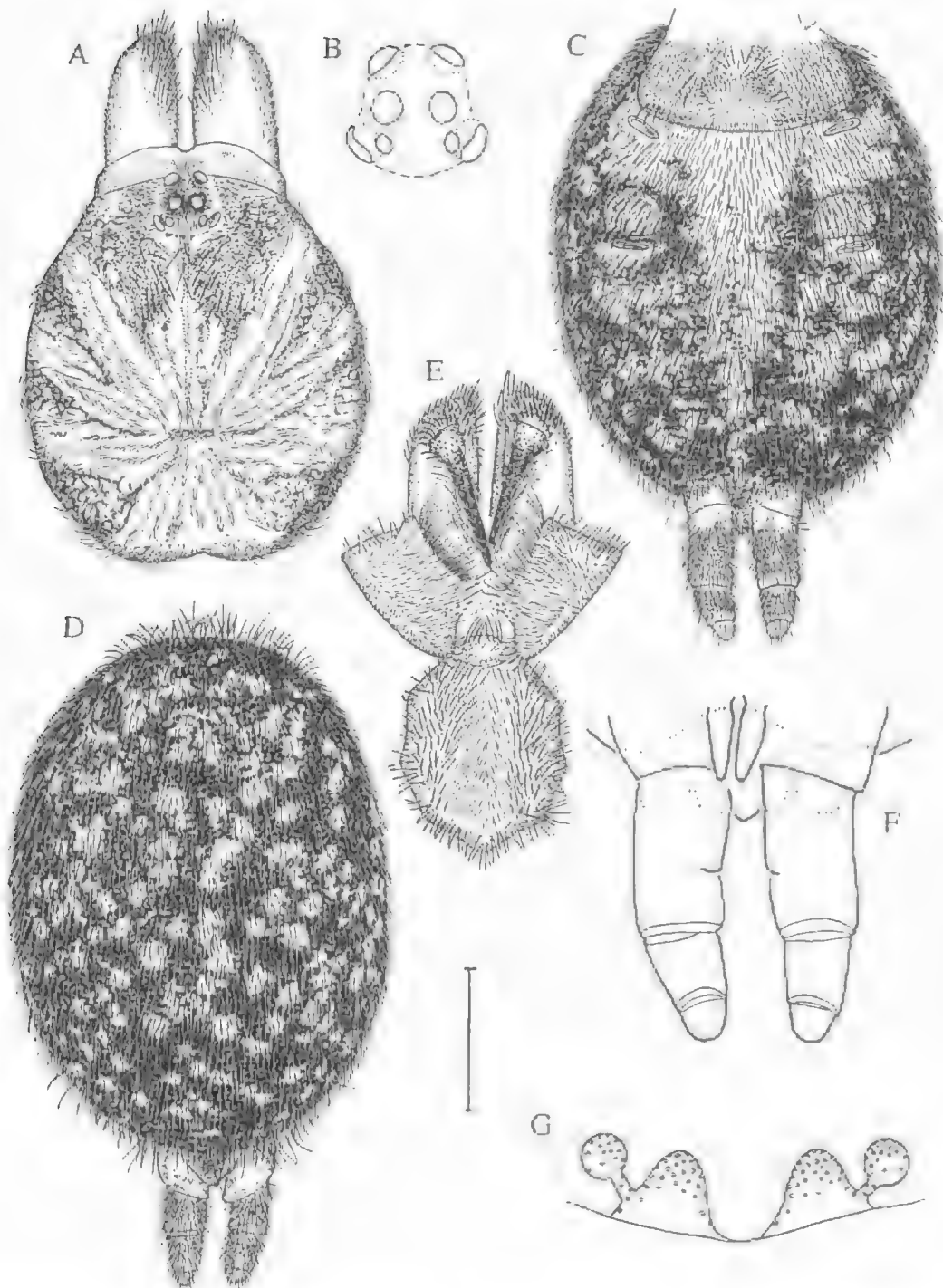


FIG. 185. *Encycrypta bertini* sp. nov., holotype ♀ (QMS17774). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, D, abdomen, ventral (C), dorsal view (D); E, sternum, maxillae, labium & chelicerae, ventral view; F, spinnerets, ventral view; G, spermathecae. Scale line = 2mm (A, C-E); 1mm (B, F); 0.25mm (G).



distinct longitudinal pallid dagger-shaped area on the abdominal venter and the relatively longer eye group, and from *E. letocarti* in the smaller PME and having spines on tibiae and metatarsi I and II.

Maxillae with less than 13 cuspules on average of both, FEMALES. Claws of IV with teeth. Basifemoral thorns absent; preening combs present. Scopula for distal 1/4 of metatarsi IV; distal 1/3 of metatarsi III. Abdomen dorsally brown with small white mottling forming 4 broken inverted Vees posteriorly; ventrally brown with long narrow pallid Vee medially and behind booklungs. Legs not annulated. Spermathecae two, a pair of sharply demarcated antennate domes with main medial lobe as high as lateral lobe. Males unknown.

#### ETYMOLOGY

For General Bertin, formerly Head of the French armed forces of New Caledonia in small recognition with his excellent cooperation with ORSTOM and overseas scientists in major, difficult expeditions such as the Expedition Panié, December 1990.

#### DESCRIPTION

##### HOLOTYPE FEMALE QMS17774

Carapace 5.63 long, 5.00 wide. Abdomen 7.50 long, 5.63 wide. Total length, 15.

**Colour.** Carapace orange brown with two brown triangles on caput and reticulated brown areas from lateral margins along interstitial ridges, chelicerae dark orange brown, and legs orange brown, not annulated. Abdomen dorsally brown with small white mottling forming 4 broken inverted Vees posteriorly; ventrally brown with long narrow pallid Vee medially and pallid areas behind all booklung apertures, and transversely in front of spinnerets.

**Carapace.** Pilosity: uniform pile of fine black hairs, most numerous on darker areas and in narrow bands along interstitial ridges; striae indistinct, narrow. Bristles: 3 erect black beside posterior striae; 7 anteromedially and 15-20 in band beside caput; 2 long thick and few finer between PME, and one long thick and 8-12 finer between ALE, three long on clypeal edge; lateral margins with single line of fine black hairs. Fovea short, straight.

**Eyes.** Tubercle distinct, raised. Group occupies 0.25 of head-width; front width, back width, length, 30, 41, 37, respectively. Back row straight. MOQ front width, back width, length, 25, 28, 19, respectively. AME:ALE:PME:PLE,

10:13:6:13. Eye interspaces: AME-AME, 0.6; AME-ALE, 0.6; ALE-PLE, 1.3; PME-PME, 1.5; PME-PLE, 0.1; ALE-ALE, 0.8.

**Chelicerae.** Narrow band of few long and many short bristles prodorsally, laterally a sparse wide band of setae. Rastellum absent. Furrow promargin with 14 teeth, 3 small, basomesally with c.6 small teeth and c.10 granules.

**Labium.** 0.52 long, 1.00 wide. Labiosternal suture shallow groove of two separated sigilla.

**Maxillae.** 1.60 long in front, 2.20 long behind. 1.00 wide; with 9-11 blunt cuspules in inner angle. Heel angular, produced; anterior lobe small, indistinct.

**Sternum.** 3.00 long, 2.56 wide. Sigilla all oval, small, marginal.

**Legs.** Basifemoral thorns and thorn spines absent. Preening combs: 1 of 2-3 setae on retroventral III, IV. Light cover of fine black hairs as well as spines and bristles.

	I	II	III	IV	Palp
Femur	3.32	3.20	2.68	4.32	2.80
Patella	2.60	2.40	1.92	2.40	2.36
Tibia	2.40	2.16	1.72	3.24	1.56
Metatarsus	1.68	1.68	2.00	3.80	-
Tarsus	1.12	1.04	1.00	1.36	1.56
Total	11.12	10.48	9.32	15.12	8.28

**Scopula.** Metatarsi: I, II, in distal 3/4, dense, entire; III, in distal 1/3-1/2, thin, divided into two wide triangles by setal band; IV, two narrow triangles, in distal 1/4-1/5, divided by setal band. Tarsi: I, II, full, dense, entire; III, divided by narrow setal band 6-8 wide; IV, divided by wider setal band 8-10 wide.

**Spines.** I: fe p1, d4w, pa 0, ti v1, me v1. II: fe p1, d1w, pa 0, ti p1, v1, me v1. III: fe p2, d1, r2w, pa p2, r1, ti p2, r1, v7, me p3, r3, v5. IV: fe d2w, r1w, pa r1, ti r3, v7, me p3, r3, v8. Palp: fe p1, pa 0, ti p1, v6.

**Claws.** 2 (IV)-3 (I) teeth medially on claws; palpal claw well developed, bare.

**Trichobothria.** In two rows, each of c.9 for length of tibiae; c.15 on metatarsi in curved row; c.12, including 2 small clavate on tarsi.

**Spermathecae.** Two, a pair of sharply demarcated antennate domes with main medial lobe as high as lateral lobe.

**Spinnerets.** PMS distinctly conical or spindle-shaped; 0.52 long, 0.13 wide, 0.08 apart, and c.0.20 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.00, 0.38, 0.23, 1.61 long, respectively.

#### DISTRIBUTION, BURROW & HABITAT

Rainforest at Mt Mandjélia, Province Nord, NC. The nests are short 4-6cm long barrels of

parchment-like silk with doors at each end. Nests were in a rotting log.

*Encyocrypta bouleti* sp. nov.  
(Figs 182, 186, Table 15)

**MATERIAL EXAMINED**

**TYPES.** Holotype ♀ plus egg sac with 29 unpigmented embryos, Port Boisé, Province Sud, 22°20'S 166°59'E, on seaside embankment c.3m. from sea, 5 Sep 1990, PG, AMNH; ♀ paratype, same data, QMS19086.

**OTHER MATERIAL EXAMINED.** Penultimate ♂ taken with them, AMNH.

**DIAGNOSIS**

Differs from *E. letocarti* and *E. cagou* in lacking preening combs, and the much darker abdomen dorsally and ventrally.

Maxillae with less than 13 cuspules on average of both. **FEMALES.** Claws of IV with teeth. Basifemoral thorns and preening combs absent. Scopula for distal 1/5 of metatarsi IV; distal half of metatarsi III. Legs lightly annulated. Abdomen dorsally dark brown with few larger pallid spots anteriorly and forming irregular pallid Vee anteriorly; ventrally brown with longitudinal pallid area. Spermathecae two, each a large long central mound with short slender lateral lobe. **MALES.** Unknown.

**ETYMOLOGY**

A patronym in honour of Mr M. Boulet, Chef du Service de l'environnement et de la gestion des Parcs et Reserves, Direction du Développement rural de la Province Sud, NC, in recognition of his devotion to the preservation of important tracts of rich and diverse forests of New Caledonia, especially in Province Sud.

**DESCRIPTION**

**HOLOTYPE FEMALE AMNH**

Carapace 7.44 long, 6.50 wide. Abdomen 8.44 long, 5.63 wide. Total length, 18.

**Colour.** Carapace orange brown with brown margins and reticulated brown lines along interstitial ridges, caput slightly darker, chelicerae red brown, and legs orange brown with slightly darker areas on distal femora, laterally patellae, proximal and distal tibiae and proximal metatarsi. Abdomen dorsally dark brown with few larger pallid spots anteriorly relieving brown and forming irregular pallid Vee in anterior half; ventrally brown with longitudinal pallid area, large pallid triangular areas between and behind booklungs and just anterior to spinnerets.

**Carapace.** Pilosity; uniform covering of fine wavy brown hairs and bristles; striae indistinct, narrow, glabrous. Bristles; 2-4 erect black beside posterior striae; c.8 long thick anteromedially and shorter finer in band beside caput; one foveal pair; 3 long thick and many finer between PME, and 2 long thick in front of AME, 3 similar and 8-10 finer between ALE; light pile of long hairs on lateral margins. Fovea wide, straight.

**Eyes.** Tubercle distinct. Back row recurved. Group occupies 0.29 of head-width; front width, back width, length, 49, 62, 50, respectively. MOQ front width, back width, length, 38, 43, 29, respectively. AME:ALE:PME:PLE, 17:15:11:15. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.6; ALE-PLE, 1.4; PME-PME, 1.5; PME-PLE, 0.1; ALE-ALE, 1.2.

**Chelicerae.** Wide sparse band of many long and short erect brown bristles prodorsally, laterally a narrow setal band. Rastellum and mound absent. Furrow promargin with 4 large mixed with 7 smaller teeth, basomesally with 5 small teeth and 10-15 granules.

**Labium.** 0.68 long, 1.40 wide. Labiosternal suture two broad sigilla medially touching.

**Maxillae.** 2.20 long in front, 3.12 long behind, 1.32 wide; with 8-11 cuspules in inner angle. Heel slightly produced rounded; anterior lobe, indistinct.

**Sternum.** 3.92 long, 3.20 wide. Sigilla all small, oval, marginal.

**Legs.** Thorn spines, basifemoral thorns, and preening combs absent.

**Scopula.** Metatarsi: I, II, full, dense, entire; III, in distal half, mixed with setae; IV, two narrow triangles in distal fifth. Tarsi: I, II, full, dense, entire; III, dense, entire, save for c.10 fine setae intermixed; IV, dense, divided by narrow setal band 3-4 wide.

**Spines.** Femora I-IV with elongate spine-like bristle basally. I: fe p1, pa 0, ti v1, me v1. II: fe p1, pa 0, ti p2, v1, me v1. III: fe p2, r2, pa p2, r1, ti p2, r2, v8, me p4, r3, v6. IV: fe r1, pa r1, ti r3, v9, me p3, r4, v8. Palp: fe p1, pa 0, ti p3, v7 + 5w.

	I	II	III	IV	Palp
Femur	4.88	4.25	3.94	5.88	3.81
Patella	3.38	3.00	2.50	3.06	2.50
Tibia	3.19	2.81	2.38	4.00	2.25
Metatarsus	2.38	2.38	2.69	4.81	-
Tarsus	1.44	1.50	1.69	1.69	2.25
Total	15.27	13.94	12.76	19.44	10.81

**Spermathecae.** Two, each a large long central mound with short slender lateral lobe

**Claws.** One long and one short tooth medially on I; one long tooth medially on IV; palpal claw small, bare.

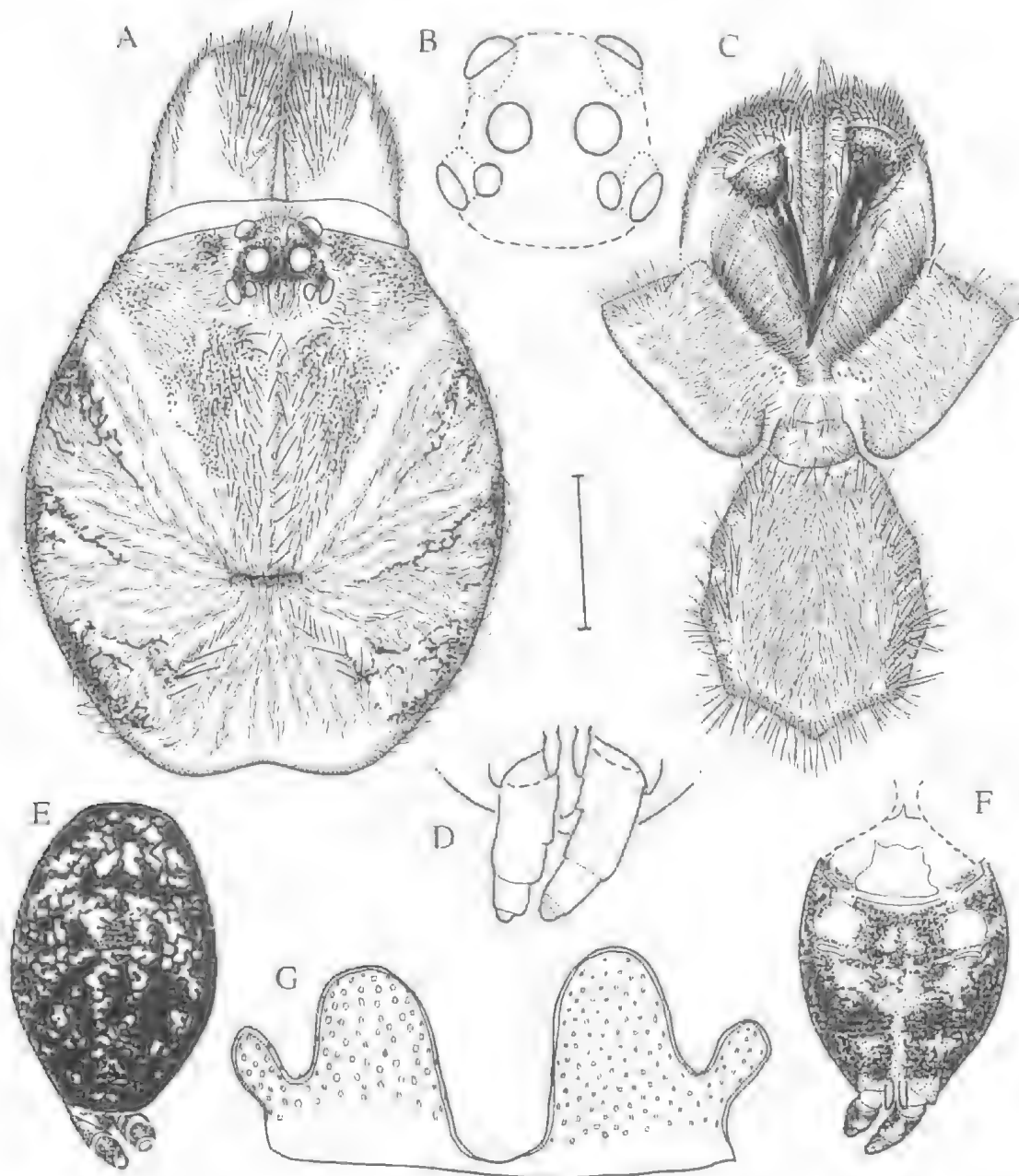


FIG. 186. *Encyocrypta bouleti* sp. nov., holotype ♀ (AMNH). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, chelicerae, sternum, maxillae & labium, ventral view; D, spinnerets, ventral view; E, F, abdomen, dorsal view (E), ventral view (F); G, spermathecae. Scale line = 2mm (A, C, D); 1mm (B); 4mm (E, F); 0.25mm (G).

*Trichobothria*. in two rows, each of c.10 for length of tibiae; c.15 on metatarsi in curved row; c.5 slender clavate and c.14 filiform on tarsi.

*Spinnerets*. PMS 0.63 long, 0.20 wide, 0.10 apart, and c.0.33 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.30, 0.45, 0.20, 1.95 long, respectively.

## DISTRIBUTION, BURROW &amp; HABITAT

Port Boisé, at the southern tip of NC. Spiders were found in short burrows with a door of floppy silk in wave-washed embankments c. 3m from the sea edge and c. 1.5m above sea-level.

*Encyocrypta gracilibulba* sp. nov.  
(Figs 182, 187-189, Table 15)

## MATERIAL EXAMINED

Types. Holotype ♂, Montagne des Sources, 22°09'S 166°35'E, Province Sud, NC, rainforest, at c. 900m altitude, 5 Sep 1990, PG, AMNH; allotype ♀, same data, AMNH.

## DIAGNOSIS

Males differ from those of *E. abelardi* in the longer palpal bulb and tibial spur, and the 1-3 teeth forming a second row on claws of IV,s; both ♂♂ and ♀♀ differ from the sympatric *E. abelardi* in the abdomen ventrally dark with distinct dagger-like pallid region posteriorly.

Maxillae with less than 13 cuspules on average of both. FEMALES. Claws of IV with teeth on outer faces. Basifemoral thorns weak; preening combs on IV. Scopula for distal 1/3 of metatarsi IV; distal 1/2 of metatarsi III. Abdomen dorsally brown with small white mottling forming paired diagonal lines posteriorly; ventrally brown with long narrow pallid dagger-like Vee medially and behind booklungs. Legs not banded. Spermathecae two, a pair of arched antennate domes with main medial lobe as high as lateral lobe; lateral lobes with apical expansion. MALES. Claws of I, IV with two rows of teeth. Preening combs weak to absent. Scopula on metatarsi in distal 1/3 on IV; in distal 3/5 on III. Abdomen dorsally brown with many fine; ventrally brown with pallid dagger medially. Legs not annulated. Tibia I with long slender spur set well back from distal edge and twisted prolaterally so tip extends laterally beyond width of tibial spur, viewed from above; spur capped with short coniform megaspine; microspur and megaspine absent; bulb pyriform with very long slender embolus with one twisted flange; cymbial faces straight.

## ETYMOLOGY

From *gracile* (L.) thin and *bulbus*, a swelling.

## DESCRIPTION

## HOLOTYPE MALE AMNH

Carapace 4.06 long, 3.56 wide. Abdomen 3.56 long, 1.75 wide. Total length, 8.

Colour. Carapace reddish brown with darker areas but no reticulations on interstitial ridges and

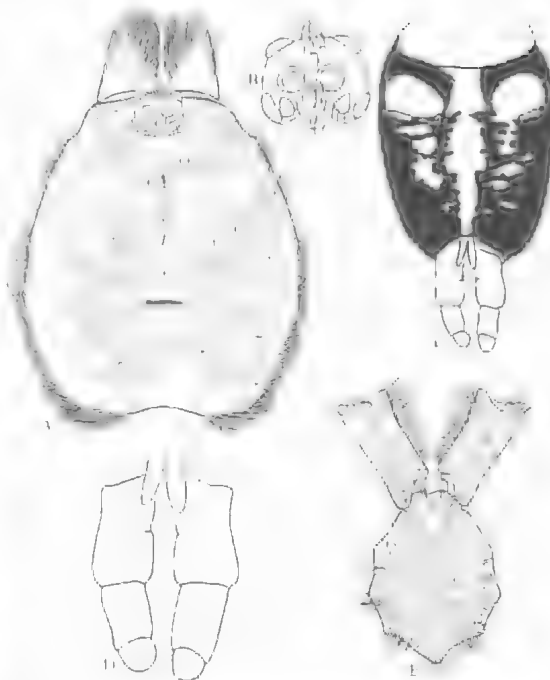


FIG. 187. *Encyocrypta gracilibulba* sp. nov., holotype ♂ (AMNH). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, abdomen, ventral view; D, spinnerets, ventral view; E, sternum, maxillae & labium, ventral view. Scale line = 2mm (A, C, E); 1mm (B, D).

caput, chelicerae brown, and legs red brown, not annulated. Abdomen dorsally brown with numerous fine white spots obscured by dense pile of hair; ventrally brown with pallid booklung covers and long medial dagger-like pallid zone.

**Carapace.** Pilosity: light pile of long grey wavy hairs and uniform cover of fine black bristles on caput, along margins, and on interstitial ridges; striae distinct, narrow. Bristles: c.8-10 erect thick black beside posterior striae; 12-16 anteromedially and in narrow band beside caput; 10-12 long and several finer between PME, and c.8 long and many finer between ALE; moderately dense bush of long hairs and band of long black bristles on lateral margins. Fovea short, filled with hair, straight.

**Eyes.** Tubercle distinct. Group occupies 0.31 of head-width; front width, back width, length, 84, 94, 75, respectively. Back row recurved. MOQ front width, back width, length, 60, 65, 46, respectively, AME:ALE:PME:PLE, 28:28:18:27. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.6; ALE-PLE, 1.1; PME-PME, 1.4; PME-PLE, 0.1, ALE-ALE, 1.2.

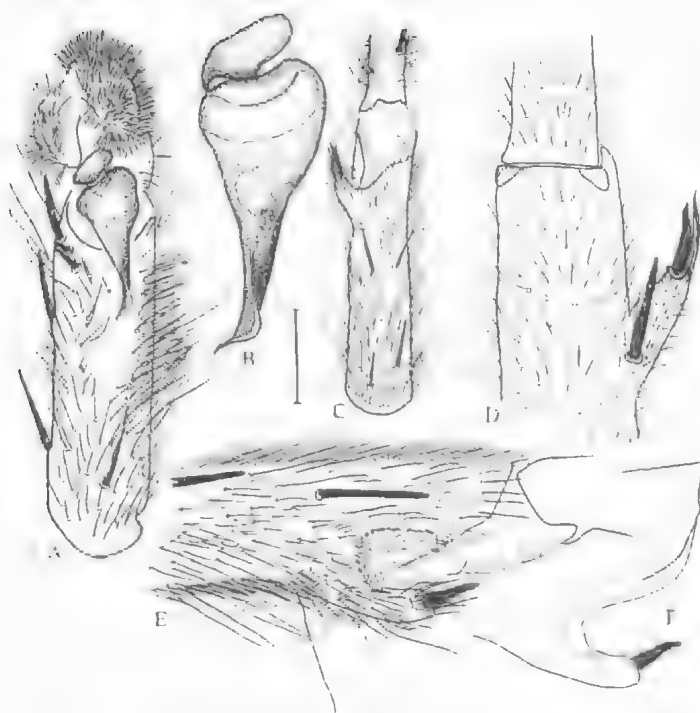


FIG. 188. *Encycocrypta gracilibulba* sp. nov., holotype ♂ (AMNH). A, palpal tibia, cymbium & bulb, ventral view; B, palpal bulb, ventral view; C-F, tibia & metatarsus I, ventral (C), dorsal (D), prolateral (E) views, spur, prolateral view, rotated from (E). Scale line = 1mm (A, D-F); 0.5mm (B); 2mm (C).

**Chelicerae.** Prodorsal surface with dense pile of long grey hairs and bristles, laterally more hairs and bristles. Rastellum and mound absent. Furrow promargin with 7 moderately large mixed with 6 smaller and two minute teeth, basomesally with 4 small pallid teeth. At mid-height of cheliceral interface, a large pallid mottled triangle on each surface.

**Labium.** 0.56 long, 1.34 wide. Labiosternal suture two broad separated shallow sigilla.

**Maxillae.** 2.53 long in front, 3.25 long behind, 1.28 wide; with 8-13 cusps in inner angle. Heel narrow produced; anterior lobe short, distinct, conical.

	I	II	III	IV	Palp
Femur	7.13	6.69	6.25	8.06	4.31
Patella	4.38	4.00	3.31	3.75	2.69
Tibia	5.63	5.19	4.56	6.75	3.25
Metatarsus	5.19	5.00	5.63	8.38	-
Tarsus	2.81	2.75	2.69	3.00	1.50
Total	25.14	23.63	22.44	29.94	11.75

**Sternum.** 4.38 long, 3.63 wide. Sigilla all small, oval, marginal, longer axis parallel to adjacent margin.

**Legs.** Tibia I with long slender spur set well back from distal edge and twisted prolaterally so tip extends laterally (Fig. 188C) beyond width of tibial spur, viewed from above; spur capped with short coniform megaspine; microspur and megaspine absent. Thorn spines absent. Femora with dense pile of long grey brown hairs dorsally and lighter pile laterally. Preening combs: 1 of 3 thin weak setae on retroventral III.

**Scopula.** Scopulate surfaces of tarsi I-IV pallid, medially collapsed. Metatarsi (longest on prolateral face, crossing diagonally over ventral face to short retrolateral portion): I, II, full, long hairs, moderately dense, not obscuring cuticle, entire; III, one triangle, mixed with setae, in distal 3/5; IV, two distinct triangles in distal 1/3. Tarsi: I, II, full, dense, entire save for single line of setae; III, dense, entire, save for setal band 4-6 wide; IV, dense, entire, save for setal band 6-10 wide.

**Spines.** I: fe p2, d4, pa 0, ti p2, v6 + megaspine; me v1 basal. II: fe p2, d4, pa 0, ti p2, v7, me v1 basal. III: fe p3, d4, r3, pa p2, r1, ti p2, r3, v9, me p4, r3, v9. IV: fe p1, d4, r2, pa r1, ti p3, r5, v9, me p5, r4, v11. Palp: fe p1, d1, pa 0, ti p1, v5.

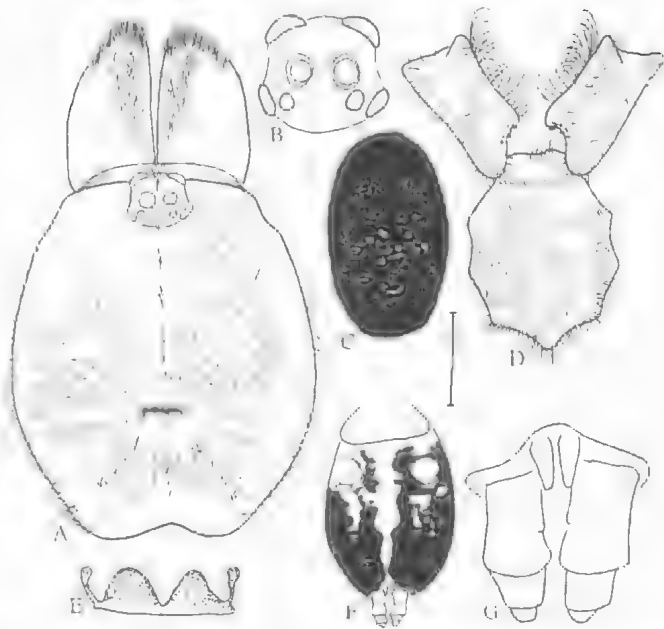
**Claws.** On I with 5-6 teeth in each of two divergent almost scooped rows; on IV slender, with 4-5 teeth on outer faces, and 1-3 long teeth on inner faces, prolateral faces of both retrolateral claws with 3 teeth. All of similar size and extend above tufts.

**Trichobothria.** Two rows, each of c.12 for length of tibiae; c.26 on metatarsi in one curved row for length; totally c.3 clavate and c.19 filiform on tarsi.

**Palp.** Bulb pyriform with long gently tapering embolic origin; embolus elongate distally with one broad twisted keel; cymbium viewed dorsally both faces straight.

**Spinnerets.** PMS 0.66 long, 0.23 wide, 0.06 apart, and c.0.32 of basal PLS in diameter. Basal,

FIG. 189. *Encyocrypta gracilibulba* sp. nov., allotype ♀ (AMNH). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, F, abdomen, dorsal (C), ventral view (F); D, sternum, maxillae & labium, ventral view; E, spermathecae; G, spinnerets, ventral view. Scale line = 1mm (B, G); 2mm (A, D); 4mm (C, F); 0.5mm (E).



middle, apical, total articles of PLS, 1.42, 0.78, 0.34, 2.54 long, respectively.

#### ALLOTYPE FEMALE AMNH

Carapace 7.69 long, 6.25 wide. Abdomen 8.81 long, 5.31 wide. Total length, 19.

**Colour.** Carapace and chelicerae red brown, legs orange brown, not annulated. Abdomen dorsally brown with small white mottling forming paired diagonal lines posteriorly; ventrally brown with long narrow pallid dagger-like Vee medially and behind booklungs.

**Carapace.** Pilosity: uniform pile of fine black hairs; striae indistinct, narrow. Bristles: ca. 5 erect black beside posterior striae; 11 anteromedially and 6-8 in band beside caput; several long and few finer between PME, and 3 long thick and 4-8 finer between ALE, 5 long on clypeal edge; lateral margins with single line of fine black hairs. Fovea short, straight.

**Eyes.** Tubercle distinct, raised. Group occupies 0.28 of head-width; front width, back width, length, 75, 86, 65, respectively. Back row procurved. MOQ front width, back width, length, 51, 60, 37, respectively. AME:ALE:PME:PLE, 18:30:19:25. Eye interspaces: AME-AME, 0.8; AME-ALE, 0.9; ALE-PLE, 1.4; PME-PME, 1.8; PME-PLE, 0.1, ALE-ALE, 1.4.

**Chelicerae.** Narrow band of few long and many short black bristles prodorsally, laterally a sparse band of setae. Rastellum absent. Furrow promargin with 6 large mixed with 8 smaller teeth, basomesally with c.6 small teeth and c.6 granules.

**Labium.** 0.75 long, 1.22 wide. Labiosternal suture a shallow groove of two separated sigilla.

**Maxillae.** 2.19 long in front, 3.13 long behind, 1.31 wide; with 11 blunt cuspules in inner angle. Heel angular, produced; anterior lobe small, indistinct.

**Sternum.** 3.94 long, 3.28 wide. Sigilla all oval, small, marginal

	I	II	III	IV	Palp
Femur	5.13	4.38	4.19	6.06	3.88
Patella	3.63	3.13	2.63	3.13	2.50
Tibia	3.88	3.50	2.94	4.94	2.38
Metatarsus	2.88	2.88	3.56	5.88	-
Tarsus	1.56	1.69	1.69	2.06	2.13
Total	17.08	15.58	15.01	22.07	10.89

**Legs.** Several basifemoral thorns weak but evident on I, II, IV. Thorn spines absent. Preening combs: 1 of 3 spaced setae on retroventral III, IV. Lightly cover of fine gray hairs as well as spines and bristles.

**Scopula.** Metatarsi: I, II, full, dense, entire; III, in distal half, long, divided into two wide triangles by setal band; IV, two triangles in distal 1/3, divided by setal band. Tarsi: I, II, full, dense, entire, save for line of setae in distal half of II; III, divided by narrow setal band 4-6 wide; IV, divided by wider setal band 8-10 wide, setae thick.

**Spines.** I: fe p1, d3w, pa 0, ti v3, me v1 basal, II: fe p2, d3w, pa 0, ti p1, v2, me v1. III: fe p1, d13, r3, pa p2, r1, ti p2, r2, v9, me p4, r3, v8. IV: fe d1w (long basal), r1, pa r1, ti p1w, r3, v7, me p3, r3, v8. Palp: fe p1, pa 0, ti p1w, v6.

**Claws.** 2 large and one minute basal tooth medially on I; one tooth or one bifurcate tooth on IV on outer face; palpal claw well developed, bare.



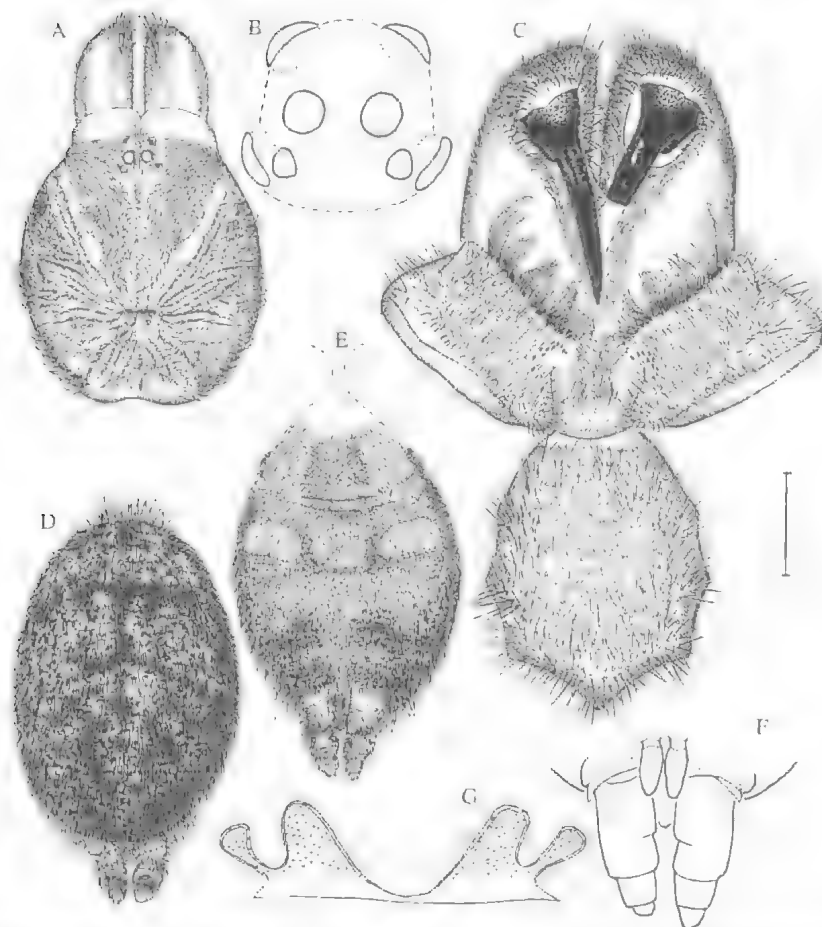


FIG. 190. *Encyocrypta grandis* sp. nov., holotype ♀ (QMS17785). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, sternum, maxillae, labium & chelicerae, ventral view; D, E, abdomen, dorsal (D), ventral view (E); F, spinnerets, ventral view; G, spermathecae. Scale line = 4.5mm (A, D, E); 2mm (C, F); 1mm (B); 0.5mm (G).

**Trichobothria.** In two rows, each of c.10 for length of tibiae; c.19 on metatarsi in long curved row; c.18, plus 4 small clavate on tarsi.

**Spermathecae** two, a pair of arched antennate domes with main medial lobe as high as lateral lobe; lateral lobes with apical expansion.

**Spinnerets.** PMS conical, 0.56 long, 0.19 wide, 0.13 apart, and c.0.30 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 0.94, 0.19, 0.09, 1.22 long, respectively.

#### DISTRIBUTION, BURROW & HABITAT

Montagne des Sources, a mountain group just east of Mts Koghis, NC. The ♂ was taken from a silken chamber in a rainforest embankment.

#### REMARKS

The palp bulb and tibial spur in the ♂ of this species is the most divergent of all species of *Encyocrypta* but do not violate the generic concept of Raven & Churchill (1991).

#### *Encyocrypta grandis* sp. nov. (Figs 181, 190, Table 15)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Mt Mandjèlia, NC, altitude 750 m, montane rainforest, in log, 12 Sep 1990, RR, QMS17785.

#### DIAGNOSIS

Differs from *E. bertini* by the much larger size, the more spinose prolateral face of tibia II and in lacking preening combs.



Maxillae with less than 13 cuspules on average of both. FEMALES. Claws of IV with teeth. Basifemoral thorns, preening combs and thorn spines absent. Scopula for distal 1/5 of metatarsi IV; distal half of metatarsi III. Abdomen dorsally brown with extensive white areas posteriorly and laterally; ventrally pallid with a pair of brown areas. Spermathecae four, on each side a pair of lobes joined basally; inner lobe larger and longer than lateral; lateral lobe with gradually demarcated apex. MALES. Unknown.

#### DESCRIPTION

##### HOLOTYPE FEMALE QMS17785

Carapace 11.10 long, 8.13 wide. Abdomen 13.10 long, 11.30 wide. Total length, 29.

**Colour.** Carapace dark reddish brown with brown areas on caput and reticulated brown markings in bands along margins and interstitial ridges forming striking effect, chelicerae dark burgundy brown, and legs orange brown with in hirsute areas making glabrous paler areas along striking. Abdomen laterally brown with white mottling, dorsally mottling forming two irregular longitudinal pale bands anteriorly; ventrally pallid with brown ovoid areas on inner edges of posterior booklung covers, a lateral pair medially and another pair away from midline in front of spinnerets, producing broad transverse pallid ovoid area in front of spinnerets and another larger medially.

**Carapace.** Pilosity: uniform pile of fine brown hairs and black bristles on caput, elsewhere hairs and bristles in narrow bands coinciding with pigmented areas on interstitial ridges; striae distinct, narrow, glabrous. Bristles: c.8-10 erect black beside posterior striae; one pair deep in fovea; 6 long and several short on caput midline and band of thinner short beside caput; 5 long thick and many finer between PME; c.10 long and several finer between ALE; moderately long curved in line on lateral margins. Fovea broad, straight. Sclerotised hirsute shelf below lateral and posterior margins of carapace.

**Eyes.** Tubercle distinct. Group occupies 0.27 of head-width; front width, back width, length, 63, 80, 67, respectively. Back row slightly procurved. MOQ front width, back width, length, 50, 55, 37, respectively. AME:ALE:PME:PLE, 21:26:16:24. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.9; ALE-PLE, 1.3; PME-PME, 1.6; PME-PLE, 0; ALE-ALE, 1.1.

**Chelicerae.** Wide band of long thick and many short black bristles prodorsally, laterally an alternating series of narrow glabrous zones and bands

of short black setae. Rastellum absent, a low mound with numerous slender bristles. Furrow promargin with 12 teeth, including 2 very large and 2 small, basomesally with c.10 granules.

**Labium.** 0.81 long, 1.56 wide. Labiosternal suture two narrow mounded sigilla touching.

**Maxillae.** 3.13 long in front, 4.38 long behind, 1.88 wide; with 11-12 cuspules along inner edge. Heel produced, angular, almost pointed; anterior lobe, broad indistinct.

**Sternum.** 5.69 long, 4.56 wide. Sigilla all oval, marginal.

**Legs.** Basifemoral thorn, patellar thorn setae, and preening combs absent.

	I	II	III	IV	Palp
Femur	7.00	6.44	5.63	8.31	5.50
Patella	5.00	4.56	3.81	4.50	3.63
Tibia	4.63	4.06	3.56	5.94	3.44
Metatarsus	5.00	3.63	3.88	6.75	-
Tarsus	1.88	1.75	1.63	2.19	3.13
Total	23.51	20.44	18.51	27.69	15.70

**Scopula.** Metatarsi and tarsi I, II, full, dense, entire. Metatarsi: III, in distal third mixed with setae; IV, two narrow sparse triangles in distal sixth. Tarsi: III, full, dense, entire save for few pallid setae distally, not parting scopula; IV, dense, divided by narrow setal band 4-6 wide.

**Spines.** Femora I-IV with moderately long spinelike bristle basally. I: fe p1, pa p1, ti p2, v3, me v1 basal. II: fe p1, d3w, pa p1, ti p3, v3, me v1. III: fe p2, r3, pa p2, r1, ti p2, d1, r3, v8, me p4, r3, v5. IV: fe p1, d3w, r1, pa r1, ti p2, r6, v10, me p3, r5, v10. Palp: fe p1, d3w, pa 0, ti p2, v9.

**Claws.** 1 long and 1 short tooth medially on I, IV; both claws of similar size but those on IV project high above smaller tufts; palpal claw very small, bare.

**Trichobothria.** Two rows, each of c.10 for 2/3 of tibiae; narrow band c.21, some fine clavate, for distal 2/3 of metatarsi in curving row crossing to retrolateral face by distal 1/4; c.7 clavate and c.10 filiform on tarsi.

**Spermathecae.** Four, on each side a pair of lobes joined basally; inner lobe larger and longer than lateral; lateral lobe with gradually demarcated apex.

**Spinnerets.** PMS 1.04 long, 0.40 wide, 0.16 apart, and c.0.40 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.80, 0.48, 0.16, 2.44 long, respectively.

#### DISTRIBUTION, HABITAT & BURROW

Mt Mandjelia, a mountain just south of Bonde in northern NC. The spider was taken from a rotting log in rainforest beside the road. The burrow was a large floppy long barrel- or truncate

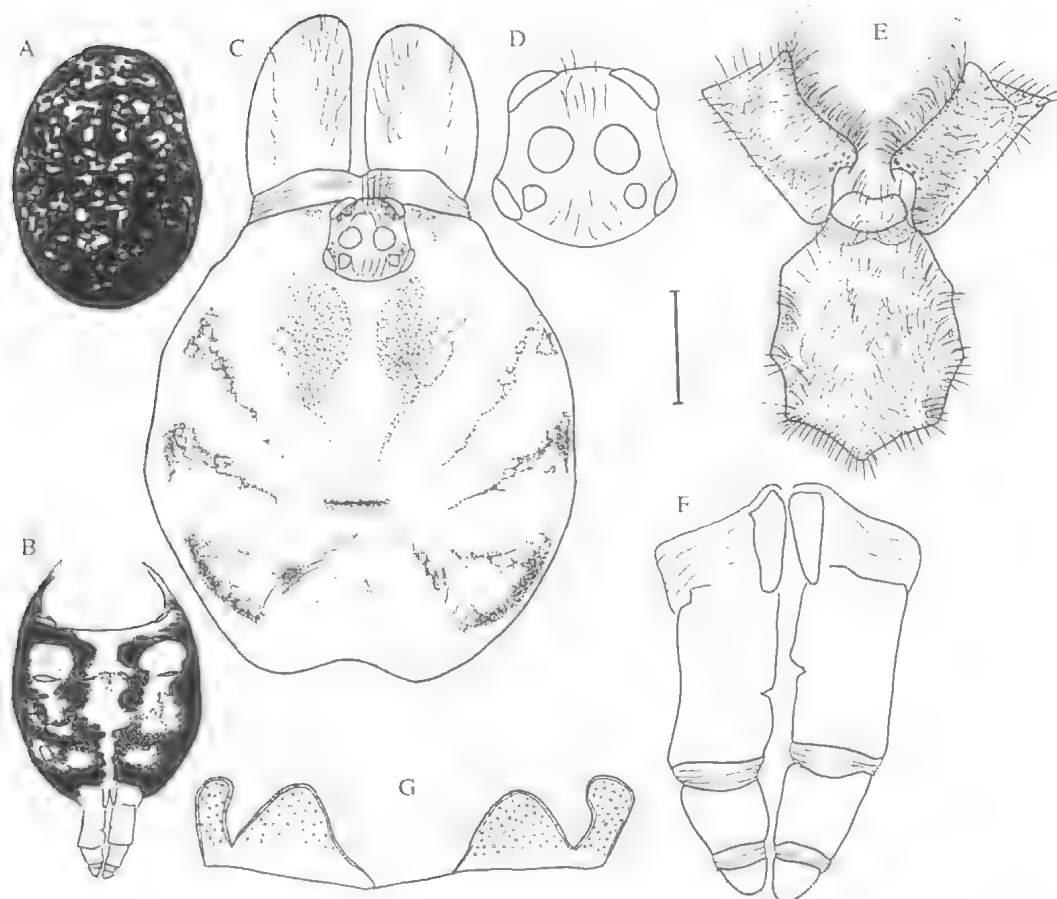


FIG. 191. *Encyocrypta heloiseae* sp. nov., holotype ♀ (QMS17782) A, B, abdomen, dorsal (A), ventral view (B); C, carapace & chelicerae, dorsal view; D, eye group, dorsal view; E, sternum, maxillae & labium, ventral view; F, spinnerets, ventral view; G, spermathecae. Scale line = 4mm (A, B); 2mm (C, E); 12mm (D, F); 0.25mm (G).

spindle-shaped tube about 12-15cm long with floppy dorsally hinged doors at each end. The silk was parchment-like silk.

***Encyocrypta heloiseae* sp. nov.**  
(Figs 182, 191, Table 15)

**MATERIAL EXAMINED**

**TYPES.** Holotype ♀, Montagne des Sources, 22°09'S 166°35'E, Province Sud, NC, rainforest, c.900m altitude, RR, 5 Sep 1990, QMS17782; paratype ♀, same data but PG, AMNH.

**OTHER MATERIAL EXAMINED.** One juvenile taken with types.

**DIAGNOSIS**

Females differ from those of *E. decooki* in having at least half (cf. third) of metatarsi III

scopulate, and from other sympatric species by the banded legs and the shape of the spermathecae.

Maxillae with less than 13 cuspules on average of both. **FEMALES.** Claws of IV with teeth. Basifemoral thorns on I, II, IV. Preening combs present. Scopula for distal 1/4 of metatarsi IV; distal three-fifths of metatarsi III. Abdomen dorsally dark brown with small white mottling; ventrally brown with pallid medial region and irregular lateral mottling centrally. Legs distinctly annulated. Spermathecae a pair of lobes on each side, inner lobe large, roughly triangular, outer lobe small, straight, no longer than inner lobe. **MALES.** Unknown.

## ETYMOLOGY

For Héloïse, wife of Peter Abelard (see *E. abelardi*).

## DESCRIPTION

## HOLOTYPE FEMALE QMS17782

Carapace 7.88 long, 8.13 wide. Abdomen 9.69 long, 6.88 wide. Total length, 20.

**Colour.** Carapace orange brown with brown caput and boldly brown reticulated areas laterally and along interstitial ridges, chelicerae orange brown, and legs orange brown contrast boldly against brown bands on distal femora, lateral to dorsal patellae with medial hirsute band dividing two orange brown glabrous bands, proximal tibiae, and mid-distal metatarsi. Abdomen dorsally dark brown with small white mottling most confluent medially; ventrally brown with pallid spindle shaped medial region and irregular lateral mottling centrally. Sternum, maxillae, and labium orange brown.

**Carapace.** Pilosity: uniform, moderately dense pile of fine brown hairs on caput, interstitial ridges, and lateral margins; striae narrow, distinct. Bristles: 3-4 erect black beside posterior striae; 8 long anteromedially and few thinner beside caput; 3 long and 6-10 finer with hairs between PME, and c. 10 long curved and few finer between ALE; long black bristles in 2-3 bands on lateral margins posterior of fovea. Fovea straight.

**Eyes.** Tubercle distinct. Back row straight. Group occupies 0.30 of head-width; front width, back width, length, 51, 65, 52, respectively. MOQ front width, back width, length, 40, 45, 30, respectively. AME:ALE:PME:PLE, 18:21:11:13. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.8; ALE-PLE, 1.2; PME-PME, 1.6; PME-PLE, 0.1; ALE-ALE, 1.1.

**Chelicerae.** Many long erect black bristles and few shorter prodorsally, proximally a small cluster of very short setae extending to curve of inner face, laterally two lines of setae, a broad glabrous band and wide setose band. Rastellum and mound absent. Furrow promargin with 10 large mixed with 2 small teeth, basomesally with 6 small teeth and 10-15 granules.

**Labium.** 0.68 long, 1.28 wide. Labiosternal suture a shallow groove of two separate sigilla.

**Maxillae.** 2.20 long in front, 3.52 long behind, 1.44 wide; with 6-8 cuspules in inner angle. Heel slightly angular; anterior lobe, indistinct.

**Sternum.** 4.12 long, 3.52 wide. Sigilla all small, oval, marginal, long axis parallel to adjacent margins.

**Legs:** Thorn spines absent. 6-12 fine basifemoral thorns on I, II, IV. Light pile of fine brown hairs. Preening combs: 1 of 3 spaced setae on retroventral III, IV.

	I	II	III	IV	Palp
Femur	5.56	5.06	4.38	6.44	4.13
Patella	3.81	3.44	2.81	3.31	2.75
Tibia	3.75	3.31	2.75	4.44	2.50
Metatarsus	2.75	2.75	3.13	5.19	-
Tarsus	1.63	1.69	1.88	1.88	2.63
Total	17.50	16.25	14.57	21.26	12.01

**Scopula.** Metatarsi and tarsi: I, II, full, dense, entire. Metatarsi: III, in distal three-fifths, mixed with setae; IV, two narrow triangles in distal quarter. Tarsi: III, entire, save for 6-10 setae mixed with scopula; IV, divided by narrow band of strong setae 6-8 wide.

**Spines.** Femora I-IV with long spine-like bristle basally. I: fe p1, pa 0, ti v1, me v1 basal. II: fe p2 (1w), pa p2, ti p2, v2, me v1, III: fe p3, d1w, r2, pa p2, r1, ti p2, r2, v8, me p4, r3, v6. IV: fe r1, pa r1, ti p2, r4, v10, me p3, r4, v9. Palp: fe p1, pa 0, ti p2, v10.

**Spermathecae.** A pair of lobes on each side. inner lobe large, roughly triangular, outer lobe small, straight, no longer than inner lobe.

**Claws.** 1 (IV)-2 (I) teeth medially; palpal claw small, bare.

**Trichobothria.** Two rows, each of c. 10 for 2/3 of tibiae; c. 13 on metatarsi in curved row; c. 5 small clavate and 10 filiform on tarsi.

**Spinnerets.** PMS 0.80 long, 0.22 wide, 0.10 apart, and c. 0.29 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.50, 0.58, 0.23, 2.31 long, respectively.

## DISTRIBUTION, BURROW &amp; HABITAT

Rainforest on Montagne des Sources, south-east of Nouméa. The holotype was found about 1m above ground on a tree; the burrow was short with a soft flap door. One smaller specimen was found in the soil collected between two rocks. Another was found in a short tube under loose bark on a dead tree; the door was at the top of the burrow.

*Encyocrypta kwakwa* sp. nov.  
(Figs 182, 192, Table 15)

## MATERIAL EXAMINED

TYPE. Holotype ♂, Kwa Kwa Forest, 22°36'30"S 167°26'00"E, Ile de Pins, NC, 19 Feb 1993, RR, NP, MH, QMS19698.

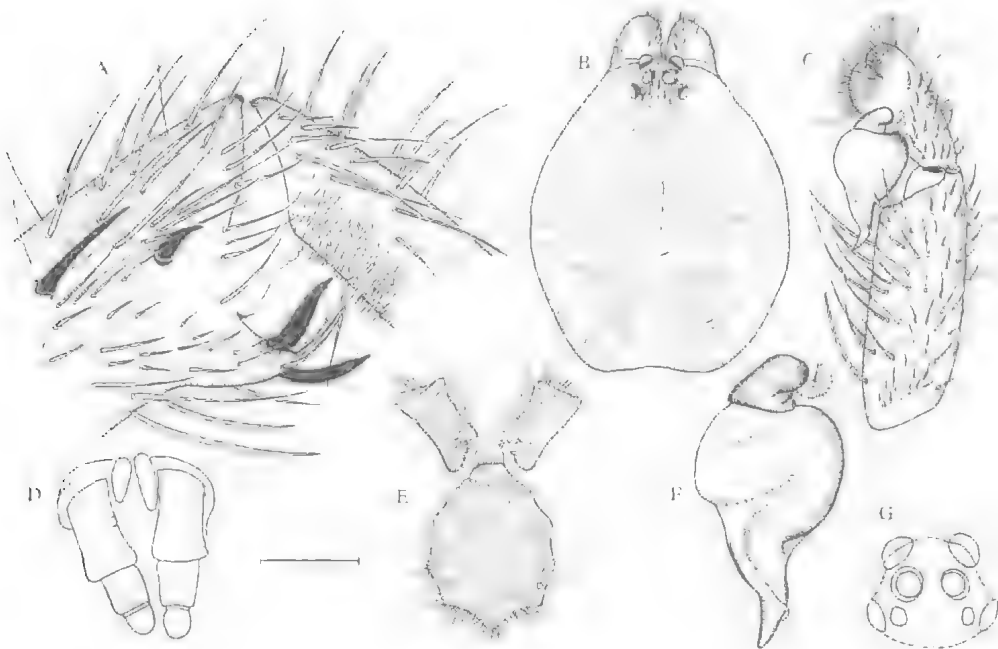


FIG. 192. *Encyocrypta kwakwa*, sp. nov., holotype ♂ (QMS19698) A, tibia & metatarsus I, prolateral view; B, carapace & chelicerae, dorsal view; C, palpal tibia, cymbium & bulb, ventral view; D, spinnerets, ventral view; E, sternum, maxillae & labium, ventral view; F, palpal bulb, ventral view; G, eyes, dorsal view. Scale line = 1mm (A, C, D, G); 0.5mm (F); 2mm (B, E).

#### DIAGNOSIS

Maxillae with less than 13 cuspules on average of both. FEMALE. Unknown. MALES. Claws of one (IV) to two (I) rows of teeth. Preening combs on III, IV. Scopula in distal 1/2 of metatarsi III, absent on IV. Ventrally brown with irregular medial Vee. Legs not banded. Tibia I with short broad distal spur with long strong megaspine and smaller subapical spine retrolaterally; microspur minute, if present, upper megaspine short, strong, curved. Bulb broadly pyriform with two constrictions before short twisted embolus; embolic shaft with 3-4 keels from first constriction to tip; retrolateral face of cymbium concave.

#### DESCRIPTION

##### HOLOTYPE MALE

Carapace 6.38 long, 3.94 wide. Abdomen 5.31 long, 3.63 wide. Total length, 13.

**Colour.** Carapace orange brown with darker caput, chelicerae dark red brown, femora dark brown, other articles lighter, not banded. Abdomen dorsally brown with many paired irregular

white spots; ventrally dark brown with irregular medial Vee.

**Carapace.** Pilosity: moderately dense bush of very long white hairs, in life carapace appears silver; striae only anterior and posterior distinct. Bristles: 3 longer erect black beside posterior striae; 7 long anteromedially and 15-20 in band beside caput; 5 long thick and several finer between PME, and 4 long thick and few finer between ALE; very long silver hairs and short black bristles on lateral margins. Fovea short, straight.

**Eyes.** Tubercle distinct. Back row procurved. Group occupies 0.34 of head-width; front width, back width, length, 41, 55, 43, respectively. MOQ front width, back width, length, 34, 37, 27, respectively. AME:ALE:PME:PLE, 15:15:10:15. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.7; ALE-PLE, 1.1; PME-PME, 1.4; PME-PLE, 0.; ALE-ALE, 0.9.

**Chelicerae.** Broad band of short black bristles and few long silver hairs prodorsally, laterally two bands of short black setae. Rastellum, mound, and intercheliceral tumescence absent. Furrow promargin with 13 spaced teeth, basomesally with 3 small teeth.

**Labium.** 0.52 long, 0.84 wide. Labiosternal suture a shallow continuous groove. No pattern evident in pilosity.

**Maxillae.** 1.68 long in front, 2.20 long behind, 0.80 wide; with 12-13 pointed cuspules. Heel slightly produced; anterior lobe well defined but small.

**Sternum.** 3.40 long, 2.68 wide. Sigilla all small, oval, marginal.

	I	II	III	IV	Palp
Femur	5.56	5.31	4.88	6.69	3.44
Patella	3.31	3.00	2.44	2.81	2.06
Tibia	4.44	4.06	3.44	5.31	2.38
Metatarsus	4.00	4.00	4.44	6.50	-
Tarsus	2.31	2.25	2.13	2.69	1.50
Total	19.62	18.62	17.33	24.00	9.38

**Legs.** Tibia I with short broad distal spur with long strong megaspine and smaller subapical spine retrolaterally; microspur minute, if present, upper megaspine short, strong, curved. Thorn spines absent. Preening combs: 1 of 3 weak setae on retroventral III, IV. Tarsi I-IV bowed; scopulate surfaces pallid, slightly incrassate. Scopula. Metatarsi: I, II, full to distal 2/3 (i.e. diagonal ventrally), dense, entire; III, in distal 1/2, entire; IV, in distal 1/5, divided by setal band 4-6 wide. Tarsi: I-III, full, dense, entire; IV, divided by setal band 2-4 wide.

**Spines.** I: fe p4, d6, r5, pa 0, ti p2 + megaspine, v8 + megaspine, me 0. II: fe p3, d5, r4, pa p1, ti p2, v7, me v1. III: fe p5, d4, r4, pa p2, r2, ti p4, r3, v7, me p4, r3, v7. IV: fe p3, d7, r4, pa r1, ti p3, r4, v11, me p4, r3, v9. Palp: fe p1, d3, r1, pa 0, ti p1, v1.

**Claws.** 2-4 teeth on claws in each of 2 rows on I, 2 teeth on outer edges only on IV; all claws tuft high and similar.

**Trichobothria.** Two rows, each of c.11 for 3/4 of tibiae; c.15 on metatarsi in curved row, row shortest on I; c.5 small clavate and c.16 filiform on tarsi.

**Palp.** Bulb broadly pyriform with two constrictions before short twisted embolus; embolic shaft with 3-4 keels from first constriction to tip; retrolateral face of cymbium concave.

**Spinnerets.** PMS of dissimilar length, average given; 0.50 long, 0.17 wide, 0.05 apart, and about 0.35 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 0.90, 0.43, 0.25, 1.58 long, respectively.

#### DISTRIBUTION & HABITAT

Kwa Kwa Forest, just south of the airport on Ile de Pins. The forest was evidently a small area, 0.5ha of closed *Melaleuca* forest with vines with a limestone boulder substrate. The ♂ was taken

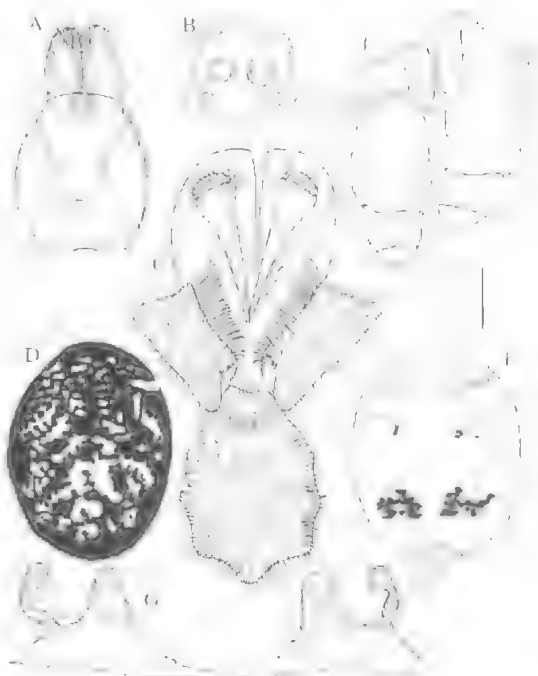


FIG. 193. *Encyocrypta mckeeli* sp. nov., holotype ♀ (QMS17748). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, chelicerae, sternum, maxillae & labium, ventral view; D, E, abdomen, dorsal (D), ventral view (E); F, spinnerets, ventral view; G, spermathecae. Scale line = 4mm (A, D, E); 2mm (C); 1mm (B, F); 0.25mm (G).

in a web tube under a small dead branch resting on the rocky network. This is the first mygalomorph recorded from Ile de Pins. The area around the forest had recently been burnt.

#### SYMPATRIC MYGALOMORPHS

Migidae.

#### *Encyocrypta mckeeli* sp. nov.

(Figs 181, 193, Table 15)

#### MATERIAL EXAMINED

TYPES. Holotype ♀, Mt Aoupinié, 21°10'S 165°18'E, altitude 890m, rainforest, 10 Sep 1990, RR, QMS17748; 1 ♀, same data, QMS17790; 2 ♀♀, same data, QMS19089; 1 ♀, PG, NIP, RR, 10 Sep 1990, AMNH; 3 ♀♀ (one with eggs), same data, 12 Feb 1993, QMS19708.

OTHER MATERIAL EXAMINED. 3 penultimate ♂♂ and 2 juveniles (QMS19090) taken with types.

## DIAGNOSIS

Differs from *E. grandis* in the spermathecae.

Maxillae with less than 13 cuspules on average of both, FEMALES. Claws of IV with teeth. Basifemoral thorns absent; preening combs and thorn spines (patellae III) present. Scopula for distal 1/5 of metatarsi IV; distal half of metatarsi III. Legs not annulated. Abdomen dorsally brown with extensive white areas posteriorly and laterally; ventrally pallid with a pair of brown areas. Spermathecae two, each an elongate coniform lobe with slender lobe arising laterally and basally with enlarged ovoidal apex. MALES. Unknown.

## ETYMOLOGY

For Dr Hugh McKee, one of the most knowledgeable scientists on the flora of New Caledonia.

## DESCRIPTION

## HOLOTYPE FEMALE QMS17748

Carapace 10.60 long, 8.80 wide. Abdomen 14.20 long, 10.70 wide. Total length, 29.

**Colour.** Carapace red brown, chelicerae burgundy brown, legs orange brown not annulated. Abdomen dorsally brown with extensive white areas posteriorly and laterally; ventrally pallid with a pair of brown areas just anterior lateral of spinnerets.

**Carapace.** Pilosity: uniform covering of fine black setae and grey brown hairs; narrow striae indistinct, very narrow, glabrous; black bristles at posterior corners of carapace, few small beside posterior striae; c.10 anteromedially and numerous smaller beside caput; c.6 long thick bristles and 5-7 finer between PME, and 6 long thick and several finer between ALE; 4 long curved on clypeal edge; a hirsute sclerotised patch in front of eye group; short black bristles and numerous short hairs and bristles on lateral margins. Fovea moderately wide, straight.

**Eyes.** Tubercle raised, distinct. Back row straight. Group is 0.29 of head-width; front width, back width, length, 59, 69, 53, respectively. MOQ front width, back width, length, 41, 52, 30, respectively. AME:ALE:PME:PLE, 15:20:11:16. Eye interspaces: AME-AME, 0.8; AME-ALE, 7.7; ALE-PLE, 1.4; PME-PME, 1.5; PME-PLE, 0.1; ALE-ALE, 1.7.

**Chelicerae.** Light pile of fine grey hair and sparsely clad with long erect black bristles prodorsally, laterally a narrow lightly hirsute band followed by a densely hirsute but not setose band, most laterad another lightly hirsute zone.

Rastellum absent; no mound but many thick setae near edge. Furrow promargin with 13 large and small teeth, basomesally with 10 small teeth reaching half length of furrow and 6-8 granules basally.

**Labium.** 0.94 long, 1.63 wide. Labiosternal suture is two separated sigilla.

**Maxillae.** 2.88 long in front, 4.06 long behind, 1.63 wide; with c.3-6 cuspules in inner angle. Heel angular, produced; anterior lobe distinct.

**Sternum.** 5.06 long, 4.19 wide. Sigilla all small, oval, marginal.

**Legs.** Lateral femora with light pile of grey brown hairs and short black setae. Basifemoral thorns absent. Two short conical thorn spines on patellae III. Preening combs: 1 poorly defined of 2 separated setae on retroventral III, IV. Scopulate surface of tarsi III, IV pallid.

	I	II	III	IV	Palp
Femur	7.38	6.63	5.94	8.56	5.63
Patella	5.00	4.44	3.63	4.50	3.63
Tibia	5.13	4.44	3.81	6.13	3.31
Metatarsus	4.25	4.06	4.38	7.13	-
Tarsus	2.31	2.19	2.50	2.50	3.44
Total	24.07	21.76	19.70	28.82	16.01

**Scopula.** Metatarsi and tarsi I, II, full, dense, so extensive as to extend upward from midlateral point on face. Metatarsi: III, in distal half, thin, mixed with setae; IV, in distal fifth, sparse, in two narrow triangles. Tarsi: III, full, dense, mixed with 10-12 setae not in band; IV, divided by setal band 4-8 wide, c.10 thicker setae along edges of setal band with finer paler setae centrally.

**Spines.** Many thick setae along dorsal femora. I: fe p1, r2, pa 0, ti p2, v7, me v1 basal. II: fe p2, d2w, r4, pa p2, ti p2, v7, me v1 basal. III: fe p4, d1w, r5, pa p2, r1, ti p2, r2, v9, me p2, r2, v8. IV: fe d2w, r1, pa r1, v1, ti p2, r3, v11, me p3, r3, v10. Palp: fe p1, pa 0, ti p2, v9.

**Spermathecae.** Two, each an elongate coniform lobe with slender lobe arising laterally and basally, with enlarged ovoidal apex.

**Claws.** Two (IV) or 3 (I) teeth on outer face; palpal claw small, bare.

**Trichobothria.** Two rows, each of c.12 for 3/4 of tibiae; c.20 on metatarsi in curved row; c.6 small clavate and 20 filiform on tarsi.

**Spinnerets.** PMS 0.80 long, 0.35 wide, 0.20 apart, and c.0.36 of basal PLS in diameter. Basal, middle, apical, total articles of PLS. 1.90, 0.78, 0.35, 3.03 long, respectively.

## DISTRIBUTION &amp; HABITAT

Rainforest at c.890m altitude on Mt Aoupinié.

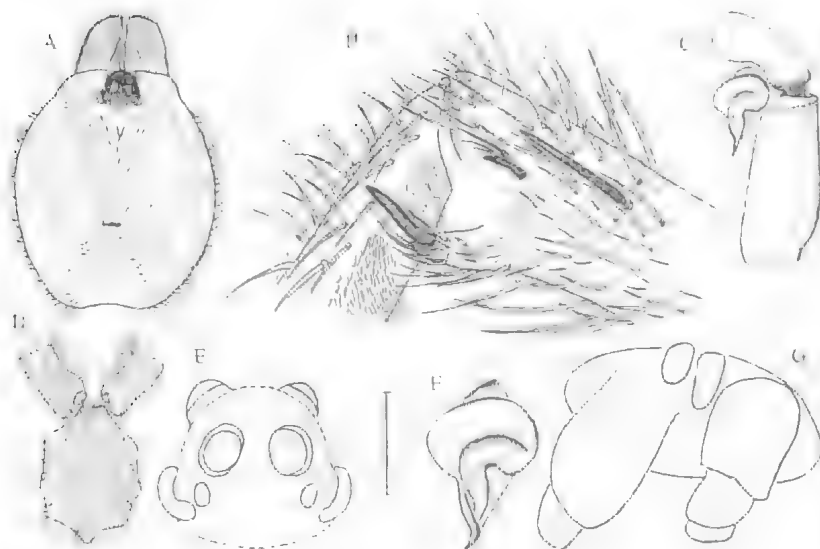


FIG. 194.

*Encyocrypta ouazangou*, sp. nov., holotype ♂ (QMS19699). A, carapace & chelicerae, dorsal view; B, tibia & metatarsus I, prolateral view; C, palpal tibia, cymbium & bulb, ventral view; D, sternum, maxillae & labium, ventral view; E, eye group, dorsal view; F, palpal bulb, ventral view; G, spiniferets, ventral view. Scale line = 1mm (B, C); 0.5mm (E-G); 2mm (A, D).

cymbium slightly concave. FEMALES. Unknown.

#### BURROW

Found on hill slopes above a creek. Leaf cover near burrows was thin. Doors were thin and hinged above. The first 10-15cm of the shaft was densely lined with thick silk and noticeably wide, presumably to allow the spider to turn around without leaving the burrow. The rest of the burrow was sinuous. Totally, the burrow was about 40-50cm long.

#### REMARKS

The two penultimate ♂♂ each have a carapace length of 8mm.

#### *Encyocrypta ouazangou* sp. nov. (Figs 181, 194. Table 15)

#### MATERIAL EXAMINED

TYPE. Holotype ♂, Ouazangou-Taom, 20°46'S 164°33'E, pitfall trap, May-October 1992, RR, E. Guilbert, G. Ingram, DJC, QMS19699. Paratypes: 3 ♂♂, same data as holotype, QMS18700.

#### DIAGNOSIS

Maxillae with less than 13 cuspules on average of both. MALES. Claws of IV bare, two rows of teeth on I. Thorn spines present; preening combs absent. Scopula on metatarsi in distal 1/4 on IV; in distal 1/3 on III. Legs not annulated. Tibia I with distal short conical spur, with long megaspine; microspur indistinct or absent; upper megaspine slender, straight; Bulb pyriform with gradual conical embolic origin with long low keel to short curved tip of embolus; retrolateral face of

#### DESCRIPTION

##### HOLOTYPE MALE QMS19699

Carapace 5.00 long, 3.88 wide. Abdomen 4.50 long, 3.00 wide. Total length, 10.

*Colour.* Carapace yellow with dark band anteriorly through eye group and another just anterior to fovea; chelicerae dark brown, and legs yellow, not banded. Abdomen pallid, probably through heat and pittrap fluid (ethylene glycol and formalin) while in situ.

*Carapace.* Pilosity: uniform cover of short black bristles and fine wavy grey hairs; striae only anterior distinct. Bristles: none longer than generally near posterior striae; 6-8 anteromedially and many in band beside caput; 6 long thick and several finer between PME, and 3 long thick and few finer between ALE; dense bush of long silver hairs and short black bristles on lateral margins, most dense in posterior half. Fovea broad, straight.

*Eyes.* Tubercle distinct. Back row procurved. Group occupies 0.29 of head-width; front width, back width, length, 28, 38, 28, respectively. MOQ front width, back width, length, 22, 25, 17, respectively. AME:ALE:PME:PLE, 10:10:5:12. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.7; ALE-PLE, 1.1; PME-PME, 1.7; PME-PLE, 0.1; ALE-ALE, 1.1.

*Chelicerae.* Small, dense cover of silver hairs and black bristles prodorsally and laterally. Rastellum, mound and intercheliceral tumescence absent. Furrow promargin with 10 spaced teeth, basomesally with 3-4 small teeth.



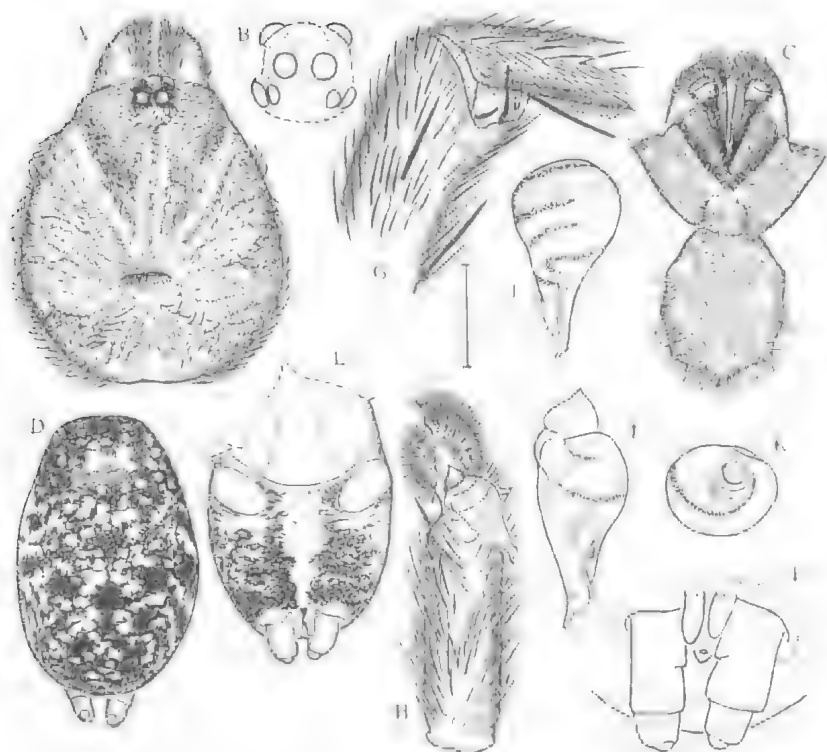


FIG. 195. *Encyocrypta risbeci* sp. nov., holotype ♂ (MNHN). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, chelicerae, sternum, maxillae & labium, ventral view; D, E, abdomen, dorsal (D), ventral view (E); F, spinnerets, ventral view; G, tibia & metatarsus I, prolateral view; H, cymbium & palpal bulb, ventral view; i-k, palpal bulb, ventral (I), retrolateral (J), axial (K). Scale line = 2mm (A, C-E); 1mm (B, F-H); 0.5mm (I-K).

**Labium.** 0.30 long, 0.75 wide. Labiosternal suture a broad shallow depression. No setal pattern.

**Maxillae.** 1.25 long in front, 1.63 long behind, 0.50 wide; with 2-5 pointed cuspules. Heel slightly produced; anterior lobe well defined but short.

**Sternum.** 2.55 long, 2.05 wide. Sigilla all small, marginal, oval.

**Legs.** Tibia I with distal short conical spur, with long megaspine; microspur indistinct or absent; upper megaspine slender, straight. 3-5 thorn small conical thorn spines on prolateral patellae III. Preening combs absent.

	I	II	III	IV	Palp
Femur	3.94	3.56	3.19	4.50	2.19
Patella	2.31	2.19	1.69	2.00	1.44
Tibia	2.94	2.56	2.19	3.56	1.44
Metatarsus	2.50	2.50	2.81	4.50	-
Tarsus	1.56	1.56	1.44	1.81	1.13
Total	13.25	12.37	11.32	16.37	6.20

**Scopula.** Metatarsi: I, II, full, hairs long sparse, entire save for few setae in basal 2/3; III, in distal 1/3; IV, sparse, in distal 1/4. Tarsi: I, II, full, moderately dense, entire; III, divided by setal band 1-2 wide; IV, divided by setal band 4-6 wide.

**Spines.** I: fe p1, d9, r1, pa p1, ti p1 + megaspine, v4 + megaspine, me 0. II: fe p1, d5, r3, pa p2, ti p2, v8, me p1, v1. III: fe p4, d4, r4, pa p5, r1, ti p3, r2, v5, me p3, r3, v3. IV: fe d5, r1, pa r1, ti p1,

r4, v9, me p6, r8, v11. Palp: fe p2, d5, pa 0, ti p4, v3.

**Claws.** 2 teeth on inner face and 4 on outer (I) or bare (IV); all claw tufts high

**Trichobothria.** Two rows, each of c.9 for 3/4 of tibiae; c.6-8 on metatarsi in long curved row on IV, only cluster of c.6 in distal 1/4 of I; c.4 small clavate basally and c.16 filiform on tarsi.

**Palp.** Bulb pyriform with gradual conical embolic origin with long low keel to short curved tip of embolus; retrolateral face of cymbium slightly concave.

**Spinnerets.** PMS distinct, spindle-shaped; 0.30 long, 0.13 wide, 0. apart, and c.0.33 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 0.75, 0.30, 0.13, 1.18 long, respectively.

#### DISTRIBUTION & HABITAT

Ouazangou-Taom, an impressive mountain group south of Kaala-Gomen, north western NC. The traps were set in very low (up to 3m) vine thicket on black soil. The trap site is probably already unrecoverably damaged as it lay in the loop of a 'hairpin' turn on a steep mountain side being mined. The traps could not be found in February 1993. This was one of the harshest localities with mygalomorphs in New Caledonia and yet of over 60 traps in 20 localities, save for one ♂ in a trap at Rivière Bleue, only these traps yielded ♂ barychelids in number. The habitat at Ouazangou-Taom covered the mountain and will probably not be destroyed.

## SYMPATRIC MYGALOMORPHS

Webs of a diplurid, probably *Caledothele* were evident through the 'scrub'

*Encyocrypta risbeci* sp. nov.

(Fig. 195, Table 15)

## MATERIAL EXAMINED

TYPE. Holotype ♂, 'New Caledonia', presumably Nouméa (see Remarks), collected by Risbec [bearing Berland 1930 identification label], MNHN

## DIAGNOSIS

Differs from *E. gracilibulba* in having two rows of teeth on the claws of IV and from *E. neocaledonica* in the more elongate tibial spur and the slightly longer palpal bulb.

Maxillae with less than 13 cuspsules on average of both. MALES. Claws of IV with two rows of teeth. Thorn spines absent; preening combs present. Scopula in distal 1/5 of metatarsi IV; distal 1/3 of metatarsi III. Abdomen dorsally brown with fine white mottling forming paired diagonal lines; ventrally brown with prominent pallid dagger-shaped mark medially. Legs not annulated. Tibia I with long curved megaspine on conical spur distally on prolateral side; no megaspine or microspur prolaterally; bulb conical with gradual embolic origin; embolus apically twisted with two low keels; retrolateral face of cymbium straight. FEMALES. Unknown.

## ETYMOLOGY

For the collector, Risbec.

## DESCRIPTION

## HOLOTYPE MALE MNHN

Carapace 6.00 long, 5.50 wide. Abdomen 5.63 long, 3.75 wide. Total length, 13.

*Colour.* Carapace orange brown with brown caput, chelicerae orange brown, and legs orange brown without annulations. Abdomen dorsally brown with fine white mottling forming irregular paired diagonal lines posteriorly; ventrally brown with pallid areas laterally and prominent pallid dagger-shaped mark medially.

*Carapace.* Pilosity: moderately dense pile of long silver bushy hairs on caput, lateral margins, around fovea, and on interstitial ridges; uniform cover of fine long and short black bristles; striae indistinct, narrow, margins. Bristles: c.5 erect black beside posterior striae; 8-10 anteromedially and many short in band beside caput; 6 long thick and several finer between PME, and c.4 long on clypeal edges and few long and several finer

between ALE; long silver hairs and short black bristles on lateral margins. Fovea broad, straight.

*Eyes.* Tubercle distinct. Group occupies 0.31 of head-width; front width, back width, length, 61, 68, 57, respectively. Back row straight. MOQ front width, back width, length, 43, 46, 34, respectively. AME:ALE:PME:PLE, 20:22:11:20. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.7; ALE-PLE, 1.3; PME-PME, 1.5; PME-PLE, 0.1; ALE-ALE, 1.1.

*Chelicerae.* Long brown bristles and silver bushy hairs prodorsally, laterally narrow band of short setae. Rastellum a low but distinct mound just above fang base, densely clad with long slender bristles. Furrow promargin with 10 large and 2 smaller teeth, basomesally with 10-15 fine granules.

*Labium.* 1.09 wide, 0.47 long. Labiosternal suture is two broad shallow sigilla in groove.

*Maxillae.* 1.63 long in front, 2.34 long behind, 0.94 wide; with 2-10 pointed cuspsules in inner angle. Heel angular, produced; anterior lobe, distinct, small.

*Sternum.* 3.25 long, 2.72 wide. Sigilla all small, oval, marginal.

*Legs.* Tibia I with long curved megaspine on conical spur distally on prolateral side; no megaspine or microspur. Thorn spines absent. Preening combs: 1 of 4 weak setae on retroventral III, IV. Ventral surface of all tarsi pallid, collapsed to deep concavity.

	I	II	III	IV	Palp
Femur	5.19	4.81	4.44	6.13	3.25
Patella	3.00	2.75	2.31	2.69	1.88
Tibia	3.75	2.94	2.88	4.50	1.94
Metatarsus	3.63	3.56	3.94	5.81	-
Tarsus	2.00	1.94	1.75	2.19	1.25
Total	17.57	16.00	15.32	21.32	8.32

*Scopula.* Metatarsi, ventrally in diagonal line, longest prolaterally; I, II, full, dense, entire, save II, distal half at midventer; III, in distal third, divided by setal band; IV, two narrow triangles in distal fifth. Tarsi: I, II, III, full, dense, entire; IV, divided by setal band c.3-5 wide.

*Spines.* I: fe p2, d5, r1, pa 0, ti p2, v6 + megaspine, me v1 long basal. II: fe p2, d4, r1, pa 0, ti p2, v7, me p1, v1 long basal. III: fe p3, d4, r3, pa p2, r1, ti p2, r2, v7, me p3, r3, v7. IV: fe p2, d4, r2, pa r1, ti p2, r2, v8, me p4, r3, v10. Palp: fe p1, d3, pa 0, ti p1, v2.

*Claws.* 5 teeth in each of two rows (I), and 3 in each of two rows (IV).

*Trichobothria.* Two rows, each of c.12 for half length of tibiae; c.15 on metatarsi in curving row; c.4 short clavate and c.20 filiform on tarsi.

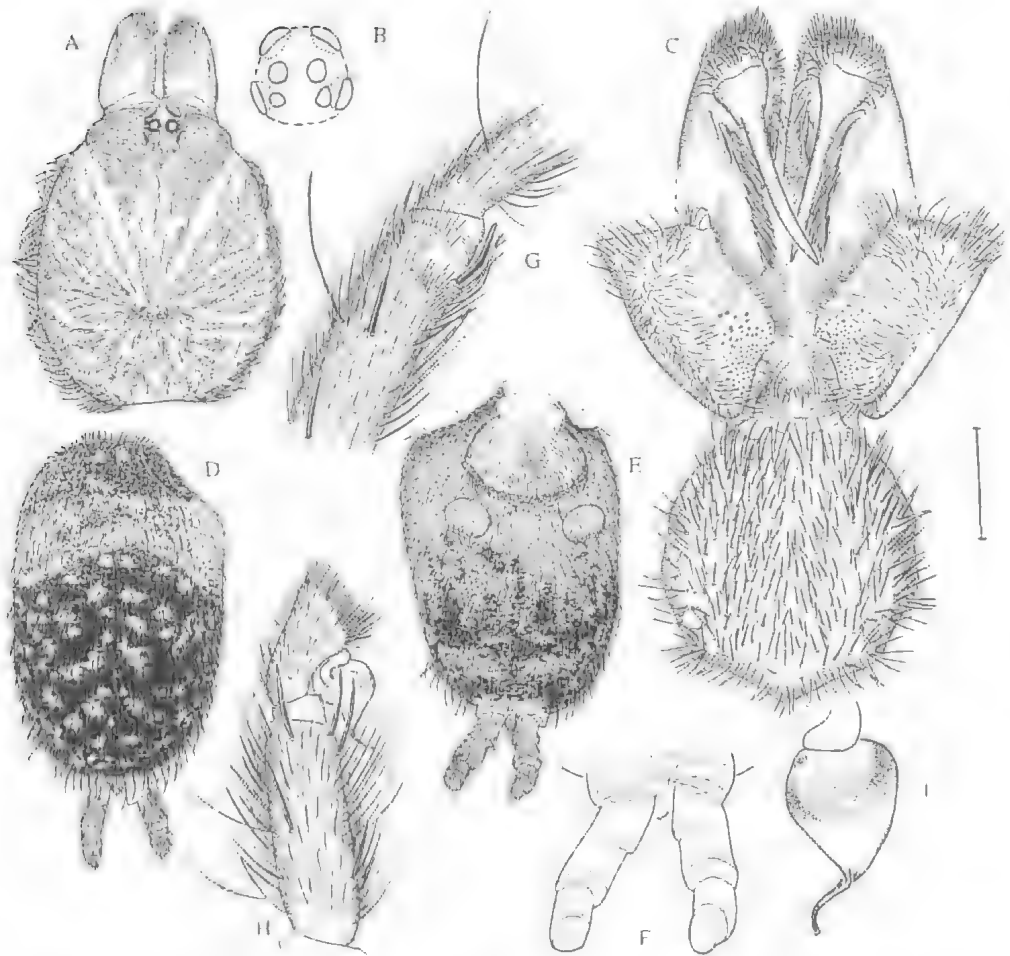


FIG. 196. *Mandjelia platnicki* sp. nov., holotype ♂ (QMS17771). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, chelicerae, stemum, maxillae & labium, ventral view; D, E, abdomen, dorsal (D), ventral view (E); F, spinnerets, ventral view; G, tibia & metatarsus I, prolateral view; H, palpal tibia, cymbium & bulb, prolateral (H) & ventral (I) view. Scale line = 2mm (A, D, E); 1mm (B, C, F-H); 0.5mm (I).

**Palp.** Bulb conical with gradual embolic origin; embolus apically twisted with two low keels; retrolateral face of cymbium straight.

**Spinnerets.** PMS 0.50 long, 0.20 wide, 0.08 apart, and c.0.33 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.02, 0.19, 0.06, 1.27 long, respectively.

**Idioctis** Koch, 1873

***Idioctis ferrophila*** Churchill & Raven, 1992  
(Fig. 182)

*Idioctis ferrophila* Churchill & Raven, 1992, p. 17.

#### DISTRIBUTION

Other material in the MNHNP from NC is labelled 'Noumèa (Risbec)'. Hence, the type locality is presumably Noumèa.

#### MATERIAL EXAMINED

See Churchill & Raven (1992); ♀, 2.5km S of Goro, Province Sud, NC, 8 Feb 1993, R. Raven, QMS19709.

## DIAGNOSIS

Differs from *Encyocrypta* and *Orstom*, gen. nov. in the long narrow sternum and pallid unpatterned abdomen.

Spermathecae with large medial lobe and short basal lobe with axes perpendicular. Thorn spines: c.30 on prolateral patellae III, c.11 small on proximal prodorsal patella IV. 3-5 teeth on paired claws of ♀♀. Rastellum a line of 10 short conical spines, not on mound, on edge above fang. MALES. Unknown.

## DISTRIBUTION &amp; HABITAT

From ironstone boulders on the beach at Port Boisé at the SE corner of NC and just south of Goro to the east (also see Churchill & Raven, 1992).

## BIOLOGY

Burrows were searched (and left intact) for ♂♂ in February (1993), May (1987, 1992), September (1990), and October (1988) without success; on all occasions young or eggs were in some burrows.

Mandjelia Raven, 1994

*Mandjelia platnicki* sp. nov.

(Figs 5C, 15E, 20A, B, 30, 196, 197, Table 16)

## MATERIAL EXAMINED

Types. Holotype ♂, Mt Mandjelia, rainforest at c.750m, in rotten log, 12 Sep 1990, RR, QMS17771; 2 ♀ paratypes, same data as holotype QMS17772, S17773.

OTHER MATERIAL EXAMINED. Juv. taken with holotype; juv., same locality, 17 Feb 1993, RR, NP, MH, QMS19710.

## DIAGNOSIS

Differs from all other barychelids known from New Caledonia by the minute size of the posterior median spinnerets and from *Orstom* by the closely spaced ridges on the maxillary cuspules and mottled rather than regular abdominal pattern.

Medium-sized, carapace length c.6-7. 60-100 cuspules on maxillae. PMS small but distinct. Rastellum and preening combs absent. Lateral eye ratio c.1.2-1.3. Scopula in distal 1/2 of metatarsi I, II. Abdomen maculate dorsally. FEMALES. Basifemoral thorns and thorn spines absent. Spermathecae two, each a broad inwardly curved lobe. Paired claws dentate; palpal claw bare; palpal tarsi aspinose. MALES. Tibia I with low distal spur bearing megaspine on proventral corner, microspur and prolateral megaspine ab-

sent. Bulb short, pyriform, with short tapering spiralled embolus; retrolateral face of cymbium slightly concave. Claws of ♂♂ with two rows of teeth on leg I, 1 row on medial keel of leg IV.

## ETYMOLOGY

For Dr Norman I. Platnick, Chairman, Entomology Department, American Museum of Natural History, New York, in celebration of those valuable contributions he has made to arachnology since the types were collected.

## DESCRIPTION

## HOLOTYPE MALE QMS17771

Carapace 5.94 long, 4.63 wide. Abdomen 6.25 long, 4.00 wide. Total length, 14.

*Colour* (moulted just before fixation). Carapace, chelicerae and legs yellow brown, legs not annulated. Abdomen (bruised anteriorly) dorsally blue brown with distinct lines of c.15-25 distinct white patches; ventrally pallid with irregular transverse brown bands in front of spinnerets and medially forming two large white oval areas, one anterior lateral of spinnerets; 3-4 irregular longitudinal areas medially.

*Carapace*. Thick pile of silver hairs on interstitial ridges and caput; striae narrow, distinct, glabrous. Bristles: 6-8 erect black thick beside posterior striae; many (not enlarged) anteromedially and beside caput; 5 long thick and 4-6 finer between PME, and 6 long thick and 3-5 finer between ALE; light bush of hairs and long strong bristles on lateral margins. Fovea short, procurved.

*Eyes*. Tubercle distinct. Back row procurved. Group occupies 0.32 of head-width; front width, back width, length, 30, 40, 32, respectively. MOQ front width, back width, length, 24, 26, 20, respectively. AME:ALE:PME:PLE, 10:13:8:12. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.5; ALE-PLE, 0.9; PME-PME, 1.1; PME-PLE, 0.1; ALE-ALE, 0.7.

*Chelicerae*. Moderately long black bristles and silver hairs prodorsally, laterally with hairs. Rastellum entirely absent. Furrow promargin with 8 large spaced teeth, basomesally without teeth or granules.

*Labium*. 0.28 long, 0.92 wide. Labiosternal suture a wide shallow groove including two sigilla.

*Maxillae*. 1.44 long in front, 1.92 long behind, 0.92 wide; with c.60-80 cuspules in inner angle and extend back toward heel. Heel rounded, angular; anterior lobe small, distinct.

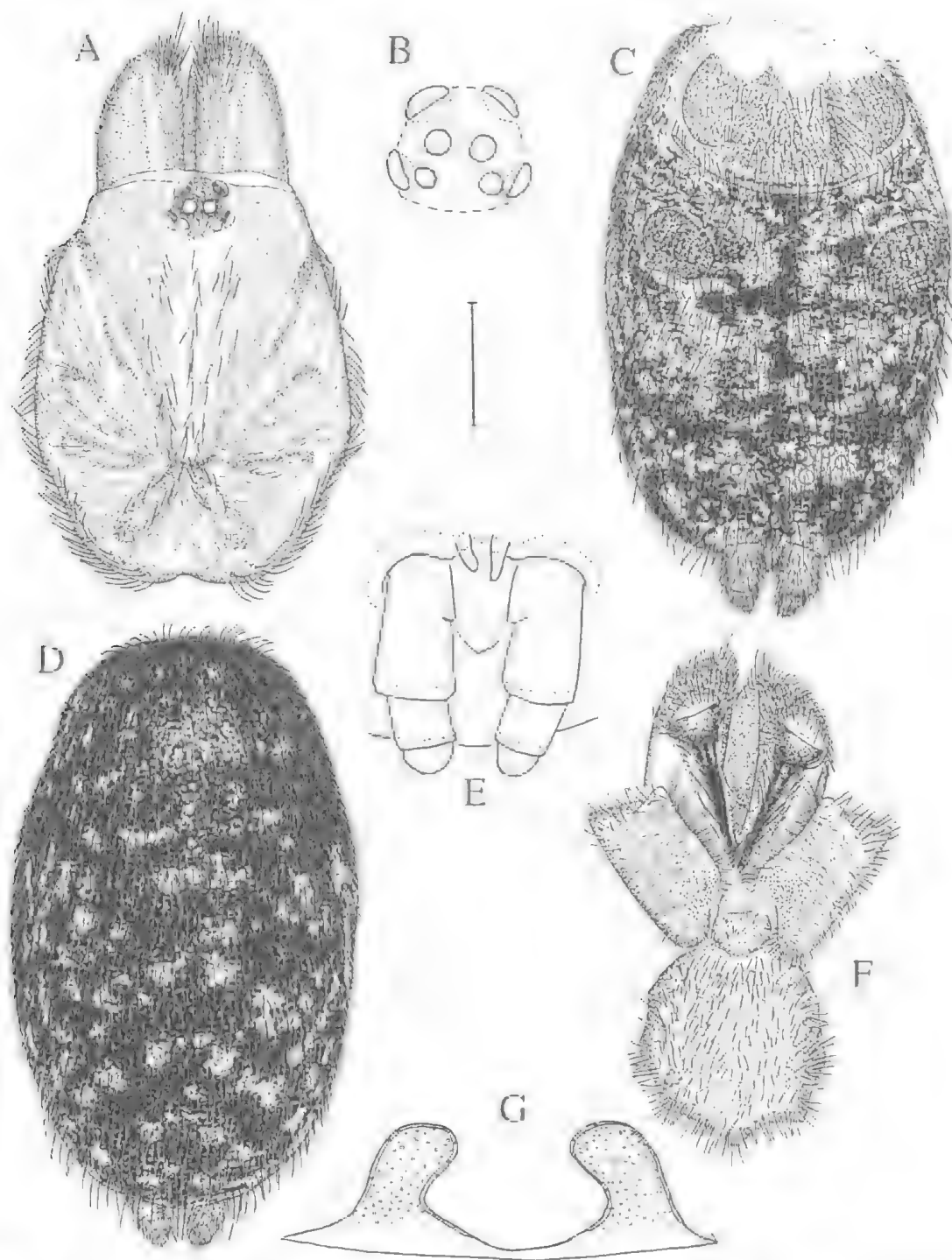


FIG. 197. *Mandjelia platnicki* sp. nov., allotype ♀ (QMS17772). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, D, abdomen, ventral (C), dorsal view (D); E, spinnerets, ventral view; F, chelicerae, sternum, maxillae & labium, ventral view; G, spermathecae. Scale line = 2mm (A, C, D, F); 1mm (B, E); 0.25mm (G).

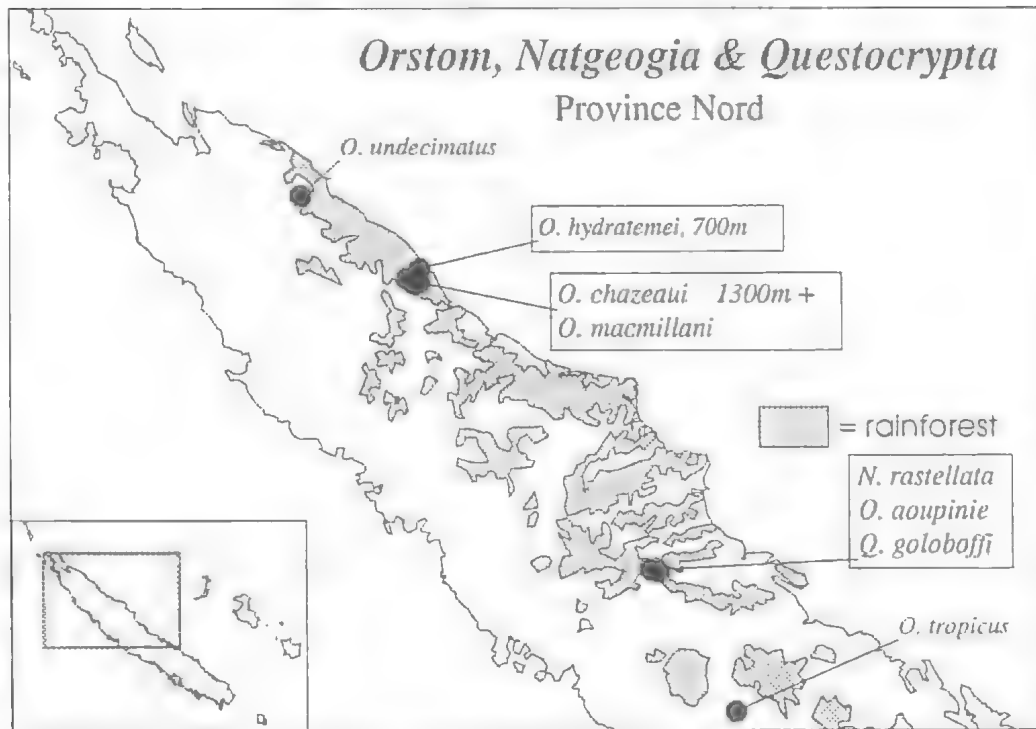


FIG. 198. Records of *Natgeogia*, *Orstom* & *Questocrypta* in northern New Caledonia with rainforest areas shaded.

**Sternum.** 2.68 long, 2.36 wide. Sigilla all small, oval, marginal, save posterior pair larger, c.9% of sternal width.

**Legs.** With uniform pile of dark fine hair. Tibia I with low distal spur bearing megaspine on proventral corner, microspur and prolateral megaspine absent; legs otherwise with normal modifications. Thorn spines and preening combs absent. Scopulate surface of tarsi and metatarsi pallid, slightly incrassate.

	I	II	III	IV	Palp
Femur	4.38	3.75	3.56	4.81	2.75
Patella	2.75	2.50	2.06	2.50	1.69
Tibia	3.25	2.75	2.50	3.81	1.31
Metatarsus	2.63	2.56	3.06	4.81	-
Tarsus	1.50	1.56	1.88	1.88	1.06
Total	14.51	13.12	12.81	17.81	6.81

**Scopula.** Metatarsi: I, II, thin, long hair in distal 1/2; scopulate area of II triangular; III, IV, absent. Tarsi: I, II, full, long, moderately dense, entire; III, scopulate bands as wide as dividing setal band, 6-8 wide; IV, like III but scopula reduced to narrow lateral ridge of hair.

**Spines.** Long spine basodorsally on all leg femora. I: fe p1, d4w, pa 0, ti p2, v5 + megaspine, me p1, v3. II: fe p1, d2, pa 0, ti p2, v7, me p2, v4. III: fe p2, d3, r3, pa p3, r1, ti p3, r3, v10, me p4,

r4, v9. IV: fe p1, d3, r2, pa r1, ti p2, d1, r5, v12, me p5, r5, v12. Palp: fe p1, d3w, pa 0, ti p2, v6.

**Claws.** 4-5 teeth on claws in each of two rows on I, rows not juxtaposed, slightly flared out and high on claw; one row of 4 teeth on medial keel only of IV.

**Trichobothria.** Two rows, each of c.9 for length of tibiae; c.16 on metatarsi in curving row; c.5 thin clavate and 20 filiform on tarsi.

**Palp.** Bulb short, pyriform, with short tapering spiralled embolus; retrolateral face of cymbium, viewed from above, slightly concave; tibia with groove in distal half of venter.

**Spinnerets.** PMS minute, 0.13 long, 0.05 wide, 0.15 apart, and about 0.09 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 0.78, 0.30, 0.13, 1.21 long, respectively.

#### ALLOTYPE FEMALE QMS17772

Carapace 7.38 long, 5.38 wide. Abdomen 9.81 long, 5.63 wide. Total length, 19.

**Colour.** Carapace and chelicerae red orange brown, and legs lighter brown without annulations. Sternum dark reddish brown, maxillae, labium, and leg coxae yellow brown. Abdomen dorsally brown with about 5 distinct paired bands of large isolated spots, many more spots laterally and posteriorly; ventrally about equally brown



and white, brown areas in irregular transverse bands.

**Carapace.** Pilosity: light pile of fine black hairs and longer black setae; striae shallow, distinct, narrow; 2-3 slightly thicker erect black bristles beside posterior striae; c.10 bristles anteromedially and many shorter beside caput; 4 long thick bristles and 8-10 finer between PME, and 6 long thick and 4-6 finer between ALE; few long hairs and numerous erect black bristles on lateral margins. Fovea short, strongly procurved.

**Eyes.** Tubercle distinct, raised. Back row procurved. Group occupies 0.26 of head-width; front width, back width, length, 38, 50, 37, respectively. MOQ front width, back width, length, 26, 33, 21, respectively. AME:ALE:PME:PLE, 10:17:9:15. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.8; ALE-PLE, 1.2; PME-PME, 0.1; PME-PLE, 1.4; ALE-ALE, 1.0.

**Chelicerae.** Wide band of many long black bristles and fine hairs prodorsally, laterally with short setae. Rastellum absent. Furrow promargin with 8 large teeth, basomesally with 15-20 small teeth and granules reaching to basal 1/3 of furrow.

**Labium.** 0.72 long, 1.28 wide. 8 setae in transverse line behind small oval glabrous area. Labiosternal suture two wide distinct, mounded, separated sigilla.

**Maxillae.** 1.92 long in front, 2.80 long behind, 1.40 wide; with c.80-100 cuspules in inner angle and extend back toward heel, not on mound. Heel produced, angular; anterior lobe small, distinct.

**Sternum.** 3.52 long, 3.20 wide. Sigilla all oval, marginal, save posterior pair separated from margin by their length.

**Legs.** Femora with light pile of fine black hairs. Basifemoral thorns, preening combs, and thorn spines absent.

	I	II	III	IV	Palp
Femur	4.50	3.88	3.19	5.13	3.44
Patella	3.31	2.81	2.38	2.88	2.19
Tibia	3.19	2.69	2.38	3.75	2.19
Metatarsus	2.31	2.31	2.88	4.69	-
Tarsus	1.31	1.44	1.88	1.88	1.69
Total	14.62	13.13	12.39	18.33	9.51

**Scopula.** Metatarsi: I, in distal two-thirds, dense, entire; II, more extensive prolaterally, distal half to one-third, divided by setal band 1-3 wide; III, IV, absent. Tarsi: I, II, dense, divided by thin, pale setae in 2-4 bands; III, setae darker, band twice as wide as each lateral scopulate band; IV, two narrow lateral bands widely separated by setal band across entire ventral surface.

**Spines.** I: fe p1, pa 0, ti 0, me v1. II: fe p1, pa 0, ti v2, me v3. III: fe p1w, d3w, r2, pa p2, r1, ti p1,

r2, v9, me p3, r4, v12. IV: fe d1, r1, pa r1, ti p2, r4, v10, me p4, r4, v9. Palp: fe p1, pa 0, ti v4.

**Claws.** 2-3 teeth on medial keel on I, IV; palpal claw large, bare. All extend just above tufts.

**Trichobothria.** in two rows, each of c.12 for length of tibiae; c.22 on metatarsi in curving row; c.5 clavate and c.15-20 filiform on tarsi.

**Spermathecae.** Two, each a broad inwardly curved lobe.

**Spinnerets.** PMS 0.22 long, 0.08 wide, 0.20 apart, and c.0.12 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.13, 0.45, 0.25, 1.83 long, respectively.

#### DISTRIBUTION & HABITAT

Rainforest on western slopes of Mt Mandjèlia, via Bondé, in northern NC.

#### BURROW

The spiders were found in a rotting log in short nest cells typical of *Encyocrypta*. The cell was about 3 times the overall length of the spider, barrelshaped, with a soft floppy door at one end. The log had deeply decomposed and remained moist with no evidence of termite attack.

#### Natgeogia gen. nov.

#### DIAGNOSIS

Differs from *Barychelus* in the distinct abdominal pattern (rather than being mottled or black) and in the numerous maxillary cuspules, and from *Mandjelia* and *Orstom* in having a strong rastellum. Differs from all other barychelids known from New Caledonia by the posterior extent of the maxillary cuspules.

#### DESCRIPTION

**FEMALES.** Carapace ovate, lightly hirsute, without darker markings and with fine black setae; no enlarged setae beside posterior striae but anteromedially. Caput strongly arched; striae, narrow distinct; lateral margins lightly setose. Fovea broad, deep, transverse, procurved. Eye group quadrate, clearly wider behind; tubercle distinct; eyes in 3 rows. Clypeus absent. Chelicerae short, stout; rastellum a pronounced conical spinose ridge terminating in a coniform projection just above fang. Cheliceral furrow with several teeth on promargin; basomesally a cluster of small teeth and granules. No modifications evident on cheliceral faces. Maxillae longer than wide; heel distinctly produced; anterior lobe



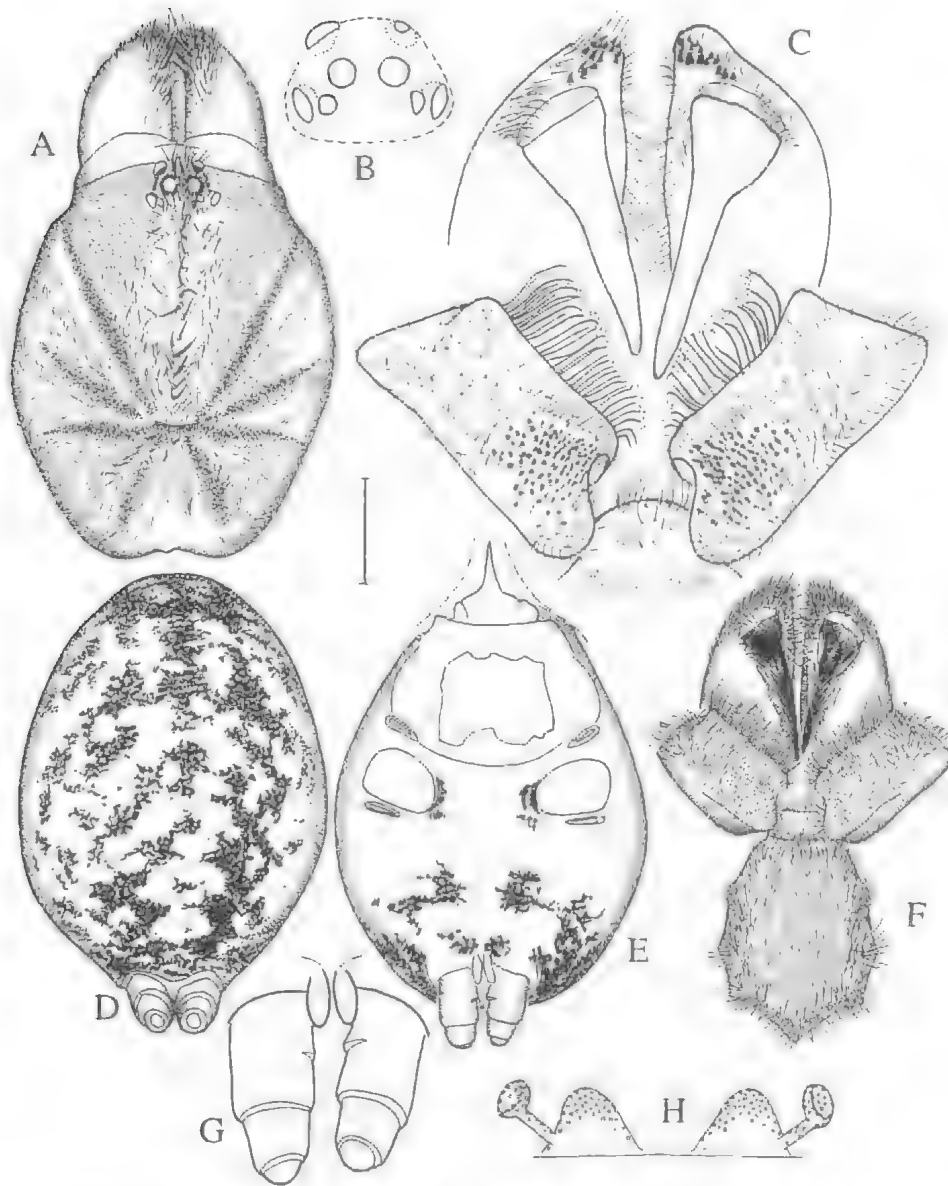


FIG 199. *Natgeorgia rastellata* sp. nov., holotype ♀ (AMNH). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, apical chelicerae with rastellum, maxillae & labium, oblique ventral view; D, E, abdomen, dorsal (D), ventral view (E); F, sternum, maxillae, labium & chelicerae, ventral view; G, spinnerets, ventral view; H, spermathecae. Scale line = 4mm (D, E); 2mm (A, C, F); 1mm (B); 0.5mm (H).

short indistinct, defined by short groove; many (100) small cuspules widely clustered on inner angle and back towards heel of maxillae, cuspules not on raised dome. Cuspule microstructure: c.40-50µm in maximum diameter; intercrest distance, 3-5µm apart; profile, bilaterally uniform balloon; ridge direction, continuous over smooth crest, like thumbprints; cuspule interspace, 2 or

more diameters. Labium wider than long, no cuspules, no anterior indentation, suture broad, low. Sternum not wide, cordate; all sigilla small, marginal, oval. Legs moderately stout, setose but not hirsute save for adpressed grey hairs. Thorn spines present; preening combs on metatarsi III; basifemoral thorns absent. Claws: three thick teeth on I in medial keel, no teeth on IV; palpal

	<i>Fijicrypta</i>	<i>Mandjelia</i>	<i>Nagevusa</i>	<i>Orstom</i>					<i>Questocrypta</i>	
	<i>villlevu</i>	<i>plamicki</i>	<i>rastellata</i>	<i>noupinie</i>	<i>chazeau</i>	<i>hydratemel</i>	<i>mcmillani</i>	<i>tropicus</i>	<i>undecimatus</i>	<i>goloboffi</i>
Size of PMS	large	reduced	large	large	large	large	large	large	large	large
No. maxillary cuspules	2-3	80-100	80-100+	60	100+	80-100	40-50	>100	60-70	100+
Dorsal abdomen, pattern	mottled	mottled	mottled	dark chevrons	chevrons	dark	dark	chevrons	chevrons	mottled
♂ Tibial spur position	absent	distal	?	?	?	?	?	?	?	?
Tibial megaspine	absent	long	?	?	?	?	?	?	?	?
Spur size	absent	small	?	?	?	?	?	?	?	?
Upper megaspine	absent	absent	?	?	?	?	?	?	?	?
Tibial microspur	absent	absent	?	?	?	?	?	?	?	?
Palpal bulb	simple	simple	?	?	simple	?	?	?	?	?
Keels on bulb	1 low	1 low	?	?	2 low	?	?	?	?	?
Embolus origin	gradual	sudden	?	?	distal	?	?	?	?	?
Tooth rows: legs I(IV)	2(1)	2(1)	?	?	=>2(2)	?	?	?	?	?
♀ Spermathecal lobes	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1	1+1
Spermathecae shape	antennate domes	long lobes	antennate domes	antennate domes	antennate domes	antennate domes	antennate domes	antennate domes	antennate domes	antennate domes
Rastellum	absent	absent	large mound	absent	absent	absent	absent	absent	absent	absent
Patellar thorns III(IV)	absent	absent	present	absent	absent	absent	absent	absent	absent	absent
Basifemoral thorns	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent
Sternum width	narrow	narrow	narrow	narrow	narrow	wide	narrow	narrow	narrow	wide
Foveal curvature	weak pro-	weak pro-	pro-	strong pro-	pro-	pro-	pro-	strong pro-	U-shaped	straight
Tibia I cf putella	less	less	less	less	less	equal	equal	greater	greater	less
Scopula metatarsi I(II)	full	3/5(1/2)	full	full	1/2 weak	full	2/3 thin	full (2/3)	full	full
III(IV)	absent	absent	1/3 (absent)	1/2 (absent)	absent	2/3(1/6)	1/3 (absent)	1/2 (absent)	2/5 (absent)	>absent
Precining combs III(IV)	>absent	absent	present	only IV	absent	present	only IV	present	present	absent
Autapomorphy	♂ spur	PMS reduced	triangular PLE	leg I spines ♀	thick legs I-III			U-shaped fovea		
Habitat	rainforest	rainforest	rainforest	rainforest	rainforest	rainforest	rainforest	rainforest	rainforest	rainforest
Altitude	500m	600m	1000m	1000m	1300-1500m	700m	1300m	490m	600m	1000m
Burrow type	?	short barrel	long sinuous	long sinuous	short sinuous	long sinuous	long sinuous	long sinuous	long sinuous	short barrel
Burrow door	?	2 end-doors	plug door	thin mossy flap	thin mossy flap	thick plug	?	thin mossy flap	thin mossy flap	2 end-doors
Distribution	Viti Levu, Fiji	Mandjelia, PN	Mt Aoupinié, PN	Mt Aoupinié, PN	Mt Panie, PN	Mt Panie, PN	Mt Panie, PN	Col des Ronsselles, PN	Mandjelia, PN	Mt Aoupinié, PN

Table 16. *Fijicrypta villlevu* in Fiji, and in New Caledonia, *Mandjelia plamicki*, *Nagevusa rastellata*, *Questocrypta goloboffi*, & *Orstom* species.

claw large, bare. Two rows of trichobothria on tibiae, one short strongly curving row on metatarsi, two rows on tarsi including few clavates. Claws tufts small, narrow in cross-section, not continuous with scopula. Scopula full and entire on metatarsi and tarsi I, II and extends for lower 200°; distal on metatarsi III, absent on IV; widely divided on tarsi III, IV. Legs lightly spinose; cluster of spines on prolateral palpal tibia. Abdomen lightly hirsute, dorsally with pattern, ventrally pallid with brown areas. PMS well developed, few spigots evident apically; PLS comparatively small, short. Spermathecae two low domes each with a long lateral lobe apically enlarged into an apically collapsed sphere. MALES. Unknown.

#### TYPE SPECIES

*Natgeogia rastellata* sp. nov.

#### ETYMOLOGY

From the name, National Geographic Society. The gender is feminine.

#### INCLUDED SPECIES

*Natgeogia rastellata* sp. nov.

#### DISTRIBUTION & HABITAT

As for species.

*Natgeogia rastellata* sp. nov.  
(Figs 7A, 198, 199, Table 16)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Mt Aoupinié, 21°10'S 165°18'E, altitude 890m, NC, PG, 10 Sep 1990, AMNH.

#### DIAGNOSIS

Differs from all other species on Mt Aoupinié having a strong rastellum, from *Orstom aoupinié* in having a mottled abdominal pattern, and from *Questocrypta goloboffi* in the strongly procurved fovea.

#### ETYMOLOGY

From the very prominent rastellum.

#### DESCRIPTION

##### HOLOTYPE FEMALE AMNH

Carapace 7.50 long, 6.25 wide. Abdomen 7.63 long, 5.63 wide. Total length, 17.

*Colour.* Carapace orange brown, chelicerae reddish brown, and legs yellow brown without

annulations. Abdomen dorsally with extensive white areas defining a series of narrow brown chevrons; ventrally pallid but for brown markings on inner edges of posterior booklungs, and pair of curved lines medially; small brown inverted triangle in front of PMS.

*Carapace.* Caput strongly arched. Bristles: light cover of short black on caput, in lines on interstitial ridges and especially along edges; striae shallow, indistinct, narrow; 6-10 fine black beside posterior striae; c.15 thick anteromedially and band of shorter finer beside caput; 8 long thick and 6-10 finer between PME, and 6 long thick and several finer between ALE; line of fine hairs on lateral margins, few black near posterior corner. Fovea short, strongly procurved.

*Eyes.* Tubercle distinct. Back row straight. Group occupies 0.28 of head-width; front width, back width, length, 43, 58, 38, MOQ front width, back width, length, 32, 40, 21, respectively. AME:ALE:PME:PLE, 12:15:8:12. Eye interspaces: AME-AME, 0.7; AME-ALE, 0.8; ALE-PLE, 1.5; PME-PME, 2.2; PME-PLE, 0.1; ALE-ALE, 1.8.

*Chelicerae.* Narrow band of short and moderately long black bristles prodorsally, laterally almost glabrous save for band of fine setae. Rastellum a distinctly raised and pointed mound, anterior face with c.15-20 short conical spines. Furrow promargin with 10 large spaced teeth, basomesally with c.10-12 small teeth.

*Labium.* 0.68 long, 1.32 wide. Lightly hirsute, transverse ridge absent, 5 setae in line across midpoint. Labiosternal suture is two sigilla medially joined in groove.

*Maxillae.* 2.08 long in front, 3.08 long behind, 1.24 wide; with c.80-100 cuspules not in inner angle, spread back over heel but not on posterior corner of heel itself. Heel distinct, angular, produced posteriorly; anterior lobe distinct.

*Sternum.* Narrow, 4.08 long, 3.04 wide. Sigilla all oval, marginal, distinct; posterior and middle pairs both c.12% as long as sternal width.

*Legs.* Three thorn spines on patellae III and comb of strong bristles distal on femora III, IV. Basifemoral thorns absent. Preening combs: 1 of 2-4 setae on retroventral III, IV. Femora laterally with uniform cover of fine black setae.

	I	II	III	IV	Palp
Femur	4.25	3.88	3.44	5.31	3.44
Patella	3.13	2.94	2.38	3.13	2.25
Tibia	2.50	2.38	1.88	3.19	1.88
Metatarsus	1.81	1.75	2.06	3.88	.-
Tarsus	1.00	1.00	1.13	1.13	1.81
Total	12.69	11.95	10.64	16.64	9.38

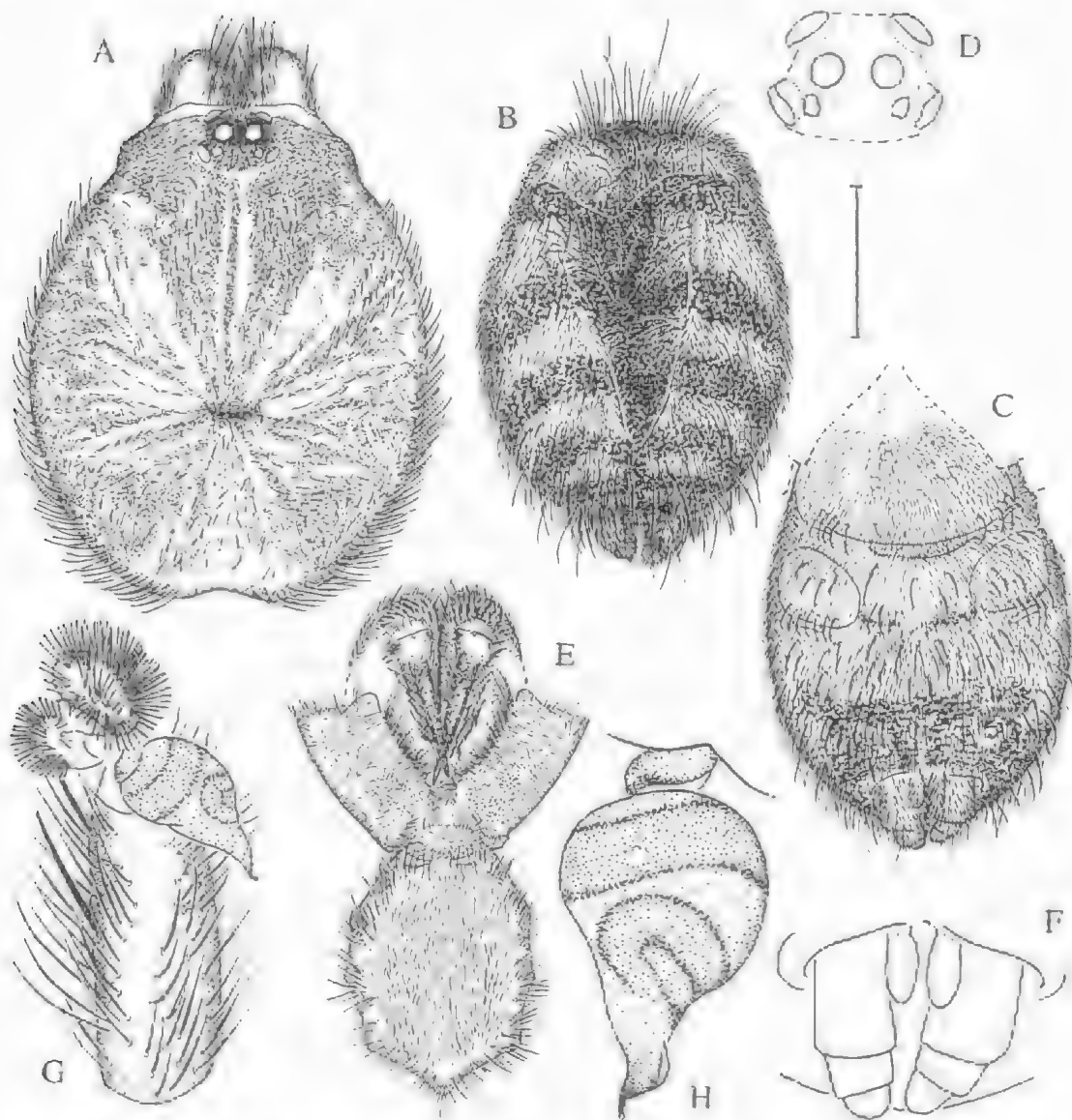


FIG. 200. *Orston chazeauae* Naven & Churchill, sp. nov., holotype ♂ (QMS17807). A, carapace & chelicerae, dorsal view; B, C, abdomen, dorsal view (B), ventral view (C); D, eyes, dorsal view; E, sternum, maxillae, labium & chelicerae, ventral view; F, spinnerets, ventral view; G, H, palpal tibia, cymbium & bulb, ventral (G) & retrolateral (H) view. Scale line = 2mm (A-C, B); 1mm (D, F, G); 0.5mm (H).

**Scopula.** Metatarsi and tarsi: I, II, full, dense, entire. Metatarsi: III, in two narrow triangles in distal third; IV, absent. Tarsi: III, dense, widely divided by setal band 6-8 wide, IV, divided by setal band over entire flat ventral surface of tarsi, laterally scopula is wide dense band.

**Spines.** Femora with many strong black bristles dorsally; cluster of spines prolaterally on palpal tibia. I: fe p1, d3, pa 0, ti v2, me 0. II: fe p1, d2,

pa 0, ti p1, v2, me tl. III: fe p2w, d2w, r1, pa p3, v1, ti p3, r2, v5, me p3, r2, v4, IV: fe d1, r1, pa 0, ti r2, v6, me p4, r2, v7. Palp: fe p1 d2w, pa v1, ti p6, v1.

**Spermathecae.** Two low domes each with a long lateral lobe apically enlarged into an apically collapsed sphere.

**Claws.** One small and two long thick teeth in medial keel (I); and bare (IV); palpal claw large, bare.

**Trichobothria.** Two rows, each of c. 12 for two-thirds of tibiae; c. 10 on metatarsi in short diagonal row; c. 5 clavate and 12-16 filiform on tarsi.

**Spinnerets.** PMS 0.40 long, 0.15 wide, 0.08 apart, and c. 0.23 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.03, 0.30, 0.13, 1.46 long, respectively.

#### DISTRIBUTION, BURROW & HABITAT

Rainforest creek slopes on Mt Aoupinié. The spider had built a plug door 2-3 mm thick; the tube was straight and silk-lined for 6-8 cm.

#### REMARKS

*Questocrypta goloboffi* and *Natgeogia rastellata* also differ in that the rastellate of the two builds a burrow. The rastellum, being an 'adaptive' character, is often wrongly presumed to be of little value. However, sympatric with these two species is *Orstom aoupinie*, a much larger spider that builds burrows in the same soil as *Natgeogia*. In contrast, no species of *Orstom* known has a rastellum. Hence, it is invalid to argue that because the rastellum is needed for burrowing it is phylogenetically labile because many species burrow that do not need one.

Despite intense searching at the type locality in two other seasons and pitfall trapping from May to the next February, no more material was taken.

#### *Orstom* gen. nov.

#### TYPE SPECIES

*Orstom chazeau* Raven & Churchill, sp. nov.

#### DIAGNOSIS

Differs from *Trittame* and *Zophorame* by the distinct abdominal pattern, shorter wider eye group, keels on the palpal bulb and lack of a rastellum. *Orstom* differs from *Mandjelia* in the large posterior median spinnerets and from *Natgeogia* and *Questocrypta* in the reduced palpal claw of ♀♀. *Orstom* is unusual but not unique in barychelids in the narrow sternum—up to 1.48 times longer than wide.

#### ETYMOLOGY

For the French scientific organisation, ORSTOM, which hosted 6 arachnological ex-

peditions to New Caledonia, and commemorates its 50th anniversary in 1994. The gender is masculine.

#### DESCRIPTION

Large to medium-sized. FEMALE. Carapace ovate, constricts rapidly posterior to fovea; lightly but uniformly hirsute; no enlarged setae in posterior stria region, but bristles present anteromedially; no foveal bristles; lateral margins lightly hirsute, without enlarged bristles; caput arched low; anterior striae broad, rest shallow, glabrous; fovea broad, procurved to U-shaped. Eye tubercle distinct, raised anterior and posterior margins gradual; clypeus absent; strong bristles between ALE and PME. Eye group as wide in front as behind, and slightly wider than long; anterior lateral eye interspace about equal to ALE-PLE distance. Area of quadrate setose cuticle in front of eye group. Chelicerae stout, broad; rastellum a few spines or absent; rastellar mound absent; fangs strong smooth; single row of many strong teeth on cheliceral promargin; basomesally a band of small teeth and granules extends to half length of furrow. Maxillae large with many (100 or more, rarely 60-80) cuspules on low or mounded inner corner; anterior lobe broad, short, indistinct, long groove; heel lightly produced. Cuspule microstructure: c. 30 µm in maximum diameter; intercrest distance, 3-5 µm apart; profile, short, bilaterally uniform balloon; ridge direction, continuous over smooth crest, like thumbprints; cuspule interspace, 2 or more diameters. Labium large, no cuspules; separated from sternum by broad glabrous groove. Sternum cordate; body of sternum (behind suture) much longer than wide (♀♀, 1.27-1.48 times longer than wide); widest point of sternum between coxae I and II; all sigilla large, oval; posterior sigilla about half its length from margin. Legs stout, spinose; basifemoral thorns and thorn spines absent, and preening combs present or absent. Scopula on metatarsi and tarsi of all legs, and tarsi of palp; scopula extends for lower 200° of diameter of metatarsi and tarsi I, II; scopula dense on legs I, II, more extensive on prolateral face of metatarsi I, II than retrolateral; scopula very weak on tarsi IV. Leg tarsi with setose mound adjacent to metatarsal joint and laterally (not distally) flanked by glabrous groove. Claws of all legs extend above claw tufts; palpal claw much smaller. All claws with single row of medial teeth. Claw tufts large, ventrally not laterally continuous with scopula; claw tufts on ♀ palps. Tarsal organ small, distal, on edge of

sclerotised cuticle. Trichobothria in two short basal rows on tibiae; one long strongly curving (dorsal to retrolateral face) on metatarsi, row is dorsal only in distal quarter; tarsi with two trichobothrial bands, all filiform, clavate trichobothria evident only in *O. tropicus*. Abdomen dorsally brown with 4-5 large paired pallid areas forming fishbone pattern; dorsal pattern becomes less evident in more pigmented large adults; ventrally uniformly brown with no pattern. Spermathecae two, each of broad basal lobe with ectally directed narrower anterior lobe; lateral lobe arises from dorsal surface. PMS large, well developed; PLS large with domed apical segment. MALES. Carapace shorter, fovea short procurved; strong black bristles on interstrial ridges, caput and lateral margins, few hairs; caput low. Tibial process unknown; palpal bulb short pyriform with short twisted keeled embolus. Claws with two rows of teeth. Intercheliceral tumescence absent.

#### INCLUDED SPECIES

- Orstom aoupinie* sp. nov.  
*Orstom chazeau* Raven & Churchill, sp. nov.  
*Orstom hydratemei* sp. nov.  
*Orstom macmillani* sp. nov.  
*Orstom tropicus* sp. nov.  
*Orstom undecimatus* sp. nov.

#### DISTRIBUTION, HABITAT & BURROW

Northern New Caledonia from Mandjèlia just south of Bondé, at Mt Panié, Mt Aoupinié, with Col des Roussettes as the most southerly known point. In all areas, the burrows have only been found in rainforest. All burrows are sinuous, with side branches, but with a wide collar and most species bind leaves into the collar and wafer thin door. *O. chazeau* occurs in moss at the base of Kauri trees (*Agathis montana*).

#### KEY TO ORSTOM

##### FEMALES

1. Tibiae and metatarsi I, II with many spines prolaterally (Fig. 202) . . . . . *O. chazeau*
- Tibiae and metatarsi I, II with few if any spines prolaterally . . . . . 2
- 2(1). Lateral eye ratio about 1.0 . . . . . 3
- Lateral eye ratio less than 0.8. . . . . 4
- 3(2). 40-50 cuspules on maxillae . . . *O. macmillani*
- 100 or more cuspules on maxillae. *O. tropicus*
- 4(2). Fovea clearly U-shaped (Fig. 207A) . . . . .
- . . . . . *O. undecimatus*
- Fovea strongly procurved, not U-shaped (Fig. 203A) . . . . . 5

- 5(4). Abdomen with distinct dorsal pattern, no scopula on metatarsi IV . . . . . *O. aoupinie*
- Abdomen without dorsal pattern; scopula on metatarsi IV . . . . . *O. hydratemei*

***Orstom chazeau* Raven & Churchill, sp. nov.**  
 (Figs 7D, E, 12B, 13G, 22A, 198, 200-202. Table 16)

#### MATERIAL EXAMINED

TYPES. All at Mt Panié, 20°33'S 164°47'E; holotype ♂, pitfall traps, 1300m, 10-13 Dec 1990, RR, QMS17807; allotype, ♀, summit, '5400ft', 19 Aug 1939, L. Macmillan, AMNH. Paratypes: 6 ♀♀, summit, 19 Aug 1939, L. Macmillan, AMNH; 3 ♀♀, at '4000-5400ft', 11 Aug 1939 & 19 Aug 1939, L. Macmillan, AMNH; 1 ♀, 1300-1600m, 15 May 1984, GBM, DC, QMS4142; 1 ♀ plus 1 fungally attacked ♀, 3 Nov 1988, RR; QMS15477; 2 ♀♀, same data, QMS15479; 3 ♀♀, same locality, TBC, QMS15476; 1 ♀, 1300m, 4-14 Dec 1990, RR, QMS19079; 4 ♀♀, same data, QMS19080; 4 ♀♀, same data, QMS17820.

OTHER MATERIAL EXAMINED. Juveniles from same locality taken with types.

#### DIAGNOSIS

Females are readily distinguished from all other barychelids by spinose prolateral and retrolateral faces of tibiae and tarsi of palps, tibiae and metatarsi I-II and prolateral face of tibiae and metatarsi III.

Abdomen with distinct pattern dorsally in adults. Maxillae with c. 60-80 cuspules extending back to heel. FEMALES. Strong spines on lateral palpal tibiae, and tibiae and metatarsi I, II, and prolaterally on palpal tarsi and metatarsi III. Preening combs, basifemoral thorns, and thorn spines absent. Two broad low mounds with two slender stalks bearing spherical tips. MALES. Two rows of teeth on claws of II (1 unknown) and IV. Leg I unknown. Bulb large, simple pyriform; embolus short, flattened, slightly hooked, arising after a simple sinuous keel marks terminal portion of bulb; cymbium slightly incised; tibia slightly barrel-shaped.

#### ETYMOLOGY

It with great pleasure that we dedicate this species to Dr Jean Chazeau, Zoologie Appliquée, O.R.S.T.O.M., for his endless cooperation to RJR in his six trips (1987-1993) to New Caledonia, in recognition of his deep commitment to conservation and biodiversity in New Caledonia as part of which he led Expedition Panié, December 1990, which yielded the sole male of the genus and a rich collection of other arachnids.



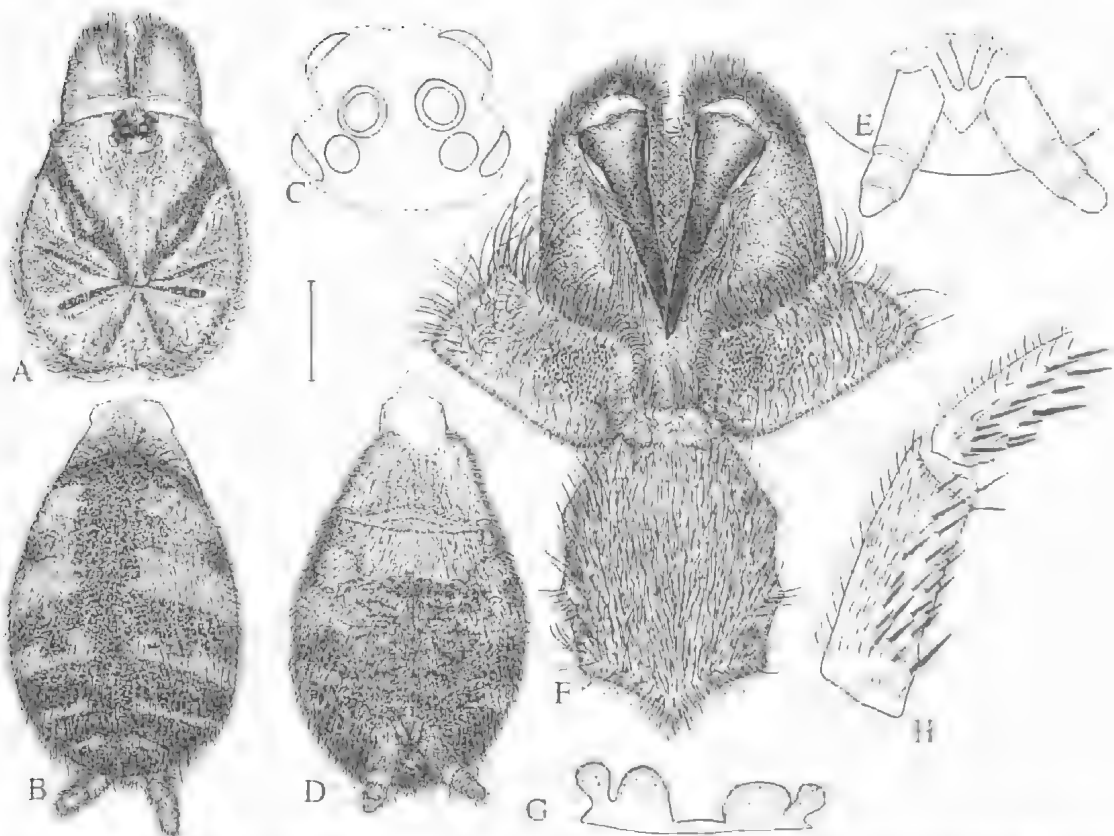


FIG. 201. *Orstom chazeaudi* Raven & Churchill, sp. nov., allotype ♀ (AMNH). A, carapace & chelicerae, dorsal view; B, D, abdomen, dorsal (B), ventral view (D); C, eyes, dorsal view; E, spinnerets, ventral view; F, sternum, maxillae, labium & chelicerae, ventral view; G, spermathecae; H, tibia & metatarsus I, prolateral view. Scale line = 1mm (E, F, H); 2mm (A, B, D), 0.5mm (C), 0.25mm (G).

#### DESCRIPTION

##### HOLOTYPE MALE QMS17807

Carapace 6.43 long, 5.50 wide. Abdomen 5.62 long, 4.18 wide. Total length, 14.

**Colour.** Carapace light brown on interstrial ridges, orange brown in striae; chelicerae red brown, sternum, maxillae, and labium yellow brown, legs orange brown with paler tarsi. Abdomen dorsally pallid with five broad brown transverse bands for its length; ventrally pallid with fine mottling ventrally, near spinnerets, and between posterior hook-lung covers.

**Carapace.** Piloosity: uniform cover of moderately long prostrate black bristles and fewer fine brown hairs; striae distinct, narrow, glabrous. Bristles: longer straight erect black beside posterior striae; 8 thick anteromedially; 8 long thick and c. 6 finer between PME, and 11 long thick, the thickest set apart between the AME, and few finer between ALE; several bands

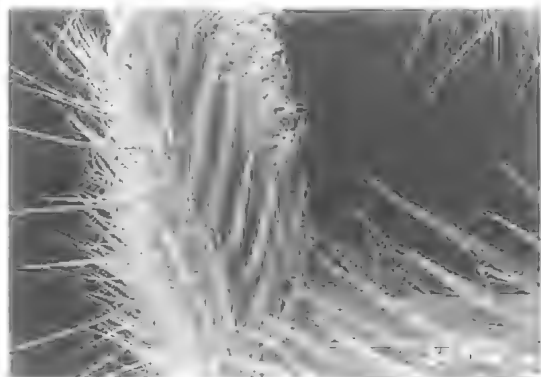


FIG. 202. Scanning Electron Micrograph. *Orstom chazeaudi*, ♀, prolateral tibia & metatarsus I.

of few long silver hairs and many long brown bristles on lateral margins, most notable in posterior half of carapace. Fovea short, distinctly procurved; four anteriorly directly pairs of fovea



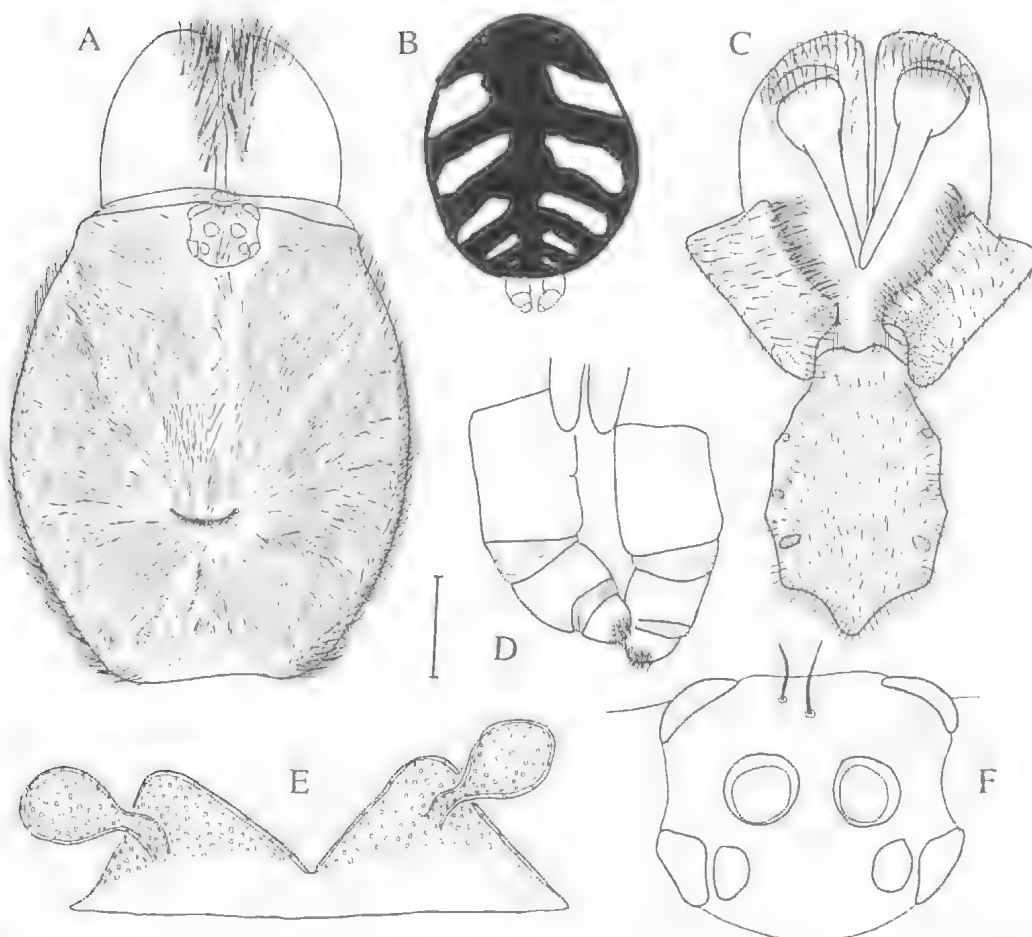


FIG. 203. *Orstom uoupinie* sp. nov., holotype ♀ (AMNH). A, carapace & chelicerae, dorsal view; B, abdomen, dorsal view; C, chelicerae, sternum, maxillae & labium, ventral view; D, spinnerets, ventral view; E, spermathecae; F, eye group, dorsal view. Scale line = 2mm (A, C); 4mm (B); 1mm (D); 0.5mm (F); 0.25mm (E).

bristles behind posteriorly directed line laterally on caput. Clypeus absent.

**Eyes.** Tubercle low, distinct. Group occupies 0.29 of head-width; front width, back width, length, 40:48:32. Back row straight. MOQ front width, back width, length, 28:29:20. AME:ALE:PME:PLE, 11:13:8:12. AME-AME, 0.6; AME-ALE, 0.6; ALE-ALE, 1.7; PME-PLE, 0.3; PME-PME, 1.2; ALE-PLE 1.2.

**Chelicerae.** Small, with few long fine hairs and numerous moderately long brown bristles prodorsally in a low band, laterally a distinct band of short curved bristles. Rastellum a triangular area of thick black bristles on inner corners. Furrow promargin strongly curved with sinuous row of 10 small spaced teeth, basomesally with seven small teeth. Intercheliceral tumescence absent.

**Labium.** Short, 1.12 wide, 0.40 long. Labiosternal suture a narrow groove of two separated sigilla.

**Maxillae.** 1.68 long in front, 2.32 long behind, 1.00 wide; with c.150 cuspules in triangular area in inner angle. Heel rounded; anterior lobe indistinct. No modifications on anterior face.

**Sternum.** 3.28 long, 2.64 wide. Sigilla small, oval, marginal; setation strongest laterally.

	I	II	III	IV	Palp
Femur	-	5.37	4.37	6.06	3.18
Patella	-	3.18	2.56	2.75	2.00
Tibia	-	3.93	3.12	4.56	2.00
Metatarsus	-	3.50	3.50	5.37	-
Tarsus	-	1.87	1.50	1.87	1.12
Total	-	15.05	20.61	8.30	8.30

**Legs.** Both first legs absent. Coxal edges rounded. Iridescent blue green sheen on bristles

of legs and also chelicerae. Thorn spines and preening combs absent.

**Scopula.** All scopulate surfaces distinctly pallid; scopula confined to ventral surfaces. Metatarsi: II, in distal 3/8, thin, short hairs; III, absent, save for 20-30 hairs distally; IV, absent. Tarsi: II, full, thin, hairs short with few setae intermixed; III, thin, hairs short, medially single line of setae not parting scopula; IV, like III but setal band 2-3 wide, pallid area more extensive laterally.

**Spines.** I: missing. II: fe d3w, pa 0, ti p1, v4, me p2, v2. III: fe 0, pa 0, ti p1, v2, me p4, r1, v6. IV: fe 0, pa 0, ti v2, me p2, r1, v4. Palp: fe p1, pa 0, ti p1 v3.

**Claws.** 4-6 (leg II, IV) teeth on claws in two close and distally convergent rows. Claw tufts small, divided, much smaller than claws. All claws of similar size.

**Trichobothria.** In two rows, each of c.8 for two-thirds of tibiae; c. 11 on metatarsi in slightly diagonal row; c.18 filiform, none clavate on tarsi. Tarsal organ small, evident dorsally near distal edge of cuticle.

**Palp.** Bulb large, simple pyriform; embolus short, flattened, slightly hooked, arising after a simple sinuous keel marks terminal portion of bulb; cymbium slightly incised; tibia slightly barrel-shaped.

**Spinnerets.** PMS 0.42 long, 0.25 wide, 0.12 apart, c.0.33 of basal PLS in diameter. PLS length of basal, middle, apical, and total articles 0.80, 0.20, 0.16, 1.16, respectively.

#### ALLOTYPE FEMALE AMNH

Carapace 6.16 long, 4.96 wide. Abdomen 5.12 long, 5.12 wide. Total length, 15.

**Colour.** Carapace, chelicerae, and legs orange brown. Abdomen dorsally brown with 5 paired transverse pallid areas, front pairs wide, back pairs narrower; ventrally brown with white mottling becoming more dominant anteriorly near posterior booklungs.

**Carapace.** Bristles: c.8 long anteromedial; 2 long between PME; c.6 long and several short between ALE. Short fine bristles uniformly on caput but forming radial lines and absent from striae and thoracic region; 2-3 irregular lines of low bristles on lateral margins. Fovea short, strongly procurved.

**Eyes.** Group occupies 0.29 of head-width; front width: back width: length, 52:61:43. Tubercle low, distinct. AME:ALE:PME:PLE, 17:17:11:16. MOQ front: back: long, 35:40:26. Back row recurved. Eye interspaces: AME-AME, 0.4;

AME-ALE, 0.6; ALE-ALE, 1.4; ALE-PLE, 0.8; PME-PLE, 0.2; PME-PME, 1.9.

**Chelicerae.** Short, rounded; bristles sparse dorsally. Rastellum a distal band of c.30 long curved thick bristles. Promargin of furrow with 8 teeth in basally curving line, basomesally with 4 small teeth.

**Labium.** 0.60 long, 1.24 wide; anteriorly concave.

**Maxillae.** 2.48 long in front, 2.48 long behind, 1.16 wide; with c.60-80 cusps in domed mound in triangular group extending back to heel and along maxilla; inner edge concave. Anterior lobe distinct; heel rounded.

**Sternum.** 3.20 long, 2.52 wide. As wide as coxae I as at III or IV. All sigilla small, oval, touching margin, 0.20 long.

**Legs.** Clusters of many long strong spines on prolateral and retrolateral palpal tibiae, and tibiae and metatarsi I, II, and prolaterally on palpal tarsi and metatarsi III. Preening combs, basifemoral thorns and thorn spines absent.

	I	II	III	IV	Palp
Femur	4.48	3.92	3.36	5.04	3.84
Patella	2.96	2.72	2.32	2.64	2.16
Tibia	2.64	2.48	1.92	3.44	2.00
Metatarsus	1.92	2.00	2.24	3.76	-
Tarsus	1.36	1.28	1.12	1.44	1.84
Total	13.36	12.40	10.96	16.32	9.84

**Scopula.** Metatarsi: I, II, weak, thin basally, distinct in distal 1/2 between spine bands; III, IV, absent. Tarsi: I, II, thin, entire, full; III, widely divided into two bands by setal band 8-10 wide; IV, absent.

**Spines.** I: fe p1 d3, pa 0, ti p30 r7 v0, me p30 r13 v0. II: fe p1 d3, pa 0, ti p36 r7 v0, me p32 r12 v0. III: fe 0, pa 0, ti v7, me p3 r1 v11. IV: fe 0, pa 0, ti 0 r1 v8, me p2 r1 v7. Palp: fe 0, pa 0, ti p18, r8, ta p4, r3.

**Trichobothria.** Tibia with c.10 for 2/3 its length; metatarsi with c.11 in curving row; tarsi with c.13 filiform and no clavate.

**Claws.** Legs I, IV with 4-5 short teeth in medial row; palpal claw large, as high as tufts, bare. Claw tufts small, thin, separated, not obscuring claws.

**Spinnerets.** PMS 0.56 long, 0.20 wide, 0.20 apart, 0.40 of basal PLS in diameter. Basal, middle, apical, and total articles of PLS 0.96, 0.40, 0.24, 1.60 long, respectively.

**Spermathecae.** Two broad low mounds with two slender stalks bearing spherical tips.

#### DISTRIBUTION & HABITAT

Mt Panić, the highest mountain (1620 metres) in NC, from altitudes 1300-1620m.

## BURROW

Spiders build short sinuous, unbranched tubes about 4-8 cm long in dense moss pads around bases of trees, especially Kauri (*Agathis montana*). Thin wafer doors, dorsally hinged with adherent moss, conceal the entrance.

## BIOLOGY

Spiders are typically found very close to the tree. Some were found in rotting bracts of palms, others were found under logs in soil. Mt Panié receives 8 metres of rain each year and hence the water table is very high and precludes burrows being constructed in the ground. Equally, many fallen logs were carefully broken in search of mygalomorphs but they too were highly saturated and clearly are too short-lived to provide shelter for burrowing mygalomorphs.

The ♂ was taken in pitfall traps set on Dec 4 and checked daily during periods of light to heavy rain for 4 days. No checks were made for three days during which rain continued. On the third night (Dec 12) of clear sunny rain-free days (rare on Mt Panié), the ♂ was taken in one of 10 traps. Both first legs were absent and were not lost in the trap. However, judged by the softness of the healing area it is likely they were lost that night and possibly during mating suggesting that spurs are on the first legs in entire ♂♂.

## REMARKS

Smaller ♀♀ and ♂♂ show strong brown banding with well defined pallid areas dorsally on the abdomen. Ventrally, the abdomen is pallid with two transverse brown bands. In larger ♀♀, the abdomen is generally much darker including the pallid areas and ventral surface. Hence, older ♀♀ look quite different to younger ones. However, apart from the size difference and individual differences, they are morphologically inseparable.

## MYGALOMORPHS SYMPATRIC

*Encyocrypta panie* Raven & Churchill, *Orstom macmillani* (Barychelidae); *Migas affinis* Berland (Migidae).

*Orstom aoupinie* sp. nov.  
(Figs 198, 203, Table 16)

## MATERIAL EXAMINED

YPES. Holotype ♀, Mt Aoupinié, altitude 890m, Province Nord, NC, 21°10'S 165°18'E, 10 Sep 1990. PG, AMNH; ♀, (2 juv. not types), same locality, NP, RR, PG, AMNH; ♀, same data, but RR, QMS17749; 2 ♀♀ (one with pallid mobile 'larvae'), same data, 12 Feb 1993, RR, QMS19711.

## DIAGNOSIS

Females differ from those of *O. chazeau* in lacking very spinose tibia I and from other species in having large PLE with triangular inner edge from above. *O. aoupinie* differs from *Ques-tocrypta goloboffi* by the distinct herringbone pattern on the abdomen the procurved fovea, and from *Natgeogia rastellata* in lacking such a strong rastellum.

Abdominal pattern present but obscured by generally dark dorsum. Maxillae with c.60 cuspules in inner angle and posteriorly. FEMALES. No strong spines grouped on anterior legs. Preening combs only distinct on metatarsi IV. Fovea broad, procurved. Spermathecae each a broad coniform mound with large but slender lobe arising about centrally with enlarged ovoid apex. MALES. Unknown.

## ETYMOLOGY

From the name of the mountain.

## DESCRIPTION

## HOLOTYPE FEMALE AMNH

Carapace 9.38 long, 7.88 wide. Abdomen 10.60 long, 8.13 wide. Total length, 23.

*Colour*. Carapace dark reddish brown, chelicerae darker brown, and legs brown, without annulations; sternum, maxillae, and labium reddish brown. Abdomen dorsally brown with five pallid paired areas, anterior pair largest becoming smaller towards posterior; ventrally pallid brown.

*Carapace*. Pilosity: uniform covering of fine black hairs on caput, hairs form bands on inter-strial ridges; striae distinct, narrow, glabrous; margins of posterior striae without enlarged setae; c.8 thick and many thin bristles anteromedially, bristles beside caput longer; 2 long moderately thick bristles and several finer between PME; 1 long thick prominently mounded bristle and many shorter bristles between ALE; pile of short grey brown hairs obscures lateral margins. Fovea broad, distinctly procurved.

*Eyes*. Tubercle distinct. Back row straight. Group wide, occupies 0.25 of head-width; front width, back width, length, 57, 60, 45, respectively. MOQ front width, back width, length, 35, 40, 27, respectively. PLE triangular viewed from above. AME:ALE:PME:PLE, 14:18:12:17. Eye interspaces: AME-AME, 0.6; AME-ALE, 0.9; ALE-PLE, 1.2; PME-PME, 1.7; PME-PLE, 0.1, ALE-ALE, 1.9.

*Chelicerae*. Wide band of many short black bristles and few longer prodorsally, laterally nar-

row glabrous band then narrow band of short bristles. Rastellum absent; distal bristles slender, weak. Furrow promargin with basally wavy line of 13 large teeth, basomesally with 5 small teeth and 6-8 granules.

**Labium.** 0.88 long, 1.75 wide. Labiosternal suture is two narrow separated sigilla.

**Muxillae.** 2.75 long in front, 3.63 long behind, 1.50 wide; with c.60 cuspules in inner angle and posteriorly. Heel slightly produced, angular; anterior lobe, broad, barely distinct.

**Sternum.** 5.75 long, 3.88 wide. Sigilla all oval, marginal; posterior pair c.12% of sternal width long.

**Legs.** Basifemoral thorns and thorn spines absent. Preening combs: 1 of 6 long setae on retroventral IV; a line of setae on retroventral III but not on common mound. Glabrous bands dorsally on femora III with 6-8 very short fine setae.

	I	II	III	IV	Palp
Femur	6.44	5.63	5.19	6.94	4.73
Patella	4.50	4.13	3.44	3.94	3.19
Tibia	4.25	3.75	3.13	5.00	2.81
Metatarsus	3.06	3.00	3.13	5.25	-
Tarsus	1.63	1.50	1.75	1.75	2.19
Total	19.88	18.01	16.33	22.88	12.94

**Scopula.** Metatarsi: I, full, dense, entire; II, ventrally diagonal, full length on prolateral face, half length on retroventral, entire, dense; III, in distal half, mixed with setae; IV, absent save for few hairs in two very narrow bands. Tarsi: I, II, full, dense, entire; III, mixed with setae; IV, dense, long, divided by setal band 10-12 wide.

**Spines.** I: fe p1, pa 0, ti p1, v8, me v1 basal. II: fe p1, pa v1w, ti p2, v6, me v1. III: fe p1w, r1w, pa 0, ti r1, v9, me p1, r2, v5. IV: fe 0, pa 0, ti r2, v8, me p1, r2, v11. Palp: fe p1, pa v2, ti p2, v4.

**Claws.** 3 small teeth on claws in medial keel of legs I, IV; palpal claw small, bare.

**Trichobothria.** Two rows, each of c.8 for half length of tibiae; c.15 on metatarsi in short curving row for distal 2/3; c.30-40 filiform on tarsi, no clavate evident.

**Spermathecae.** Each a broad coniform mound with large but slender lobe arising centrally with enlarged ovoid apex.

**Spinnerets.** PMS 0.75 long, 0.32 wide, 0.08 apart, and c.0.33 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.38, 0.60, 0.38, 2.36 long, respectively.

#### DISTRIBUTION & HABITAT

Montane rainforest on western slopes of Mt Aoupinié, NC, at an altitude of c.890m.

#### BURROW

The burrow resembles that of the sympatric *Encyocrypta mckeei*. It has a thin door, dorsally hinged. The lower lip forms a short distinct curved platform in front of the burrow when the door is closed. The burrows were found on the slopes of a (then) dry creek bed.

#### SYMPATRIC MYGALOMORPHS

*Encyocrypta mckeei*, *Natgeogia rastellata*, *Questocrypta goloboffi* (Barychelidae); *Caledothele aoupinie* Raven (Dipluridae).

**Orstom hydratemei** Raven & Churchill, sp. nov.  
(Figs 198, 204, Table 16)

#### MATERIAL EXAMINED

**Types.** Holotype ♀, Mt Panié, 20°33'S, 164°47'E, NC, on track to camp, rainforest at c.700m, rainforest, 4 Nov 1988, RR, TBC, QMS15470; 2 ♀♀, same data but 2 Nov 1988, QMS15471.

**OTHER MATERIAL EXAMINED.** Penultimate ♂ taken with QMS15471.

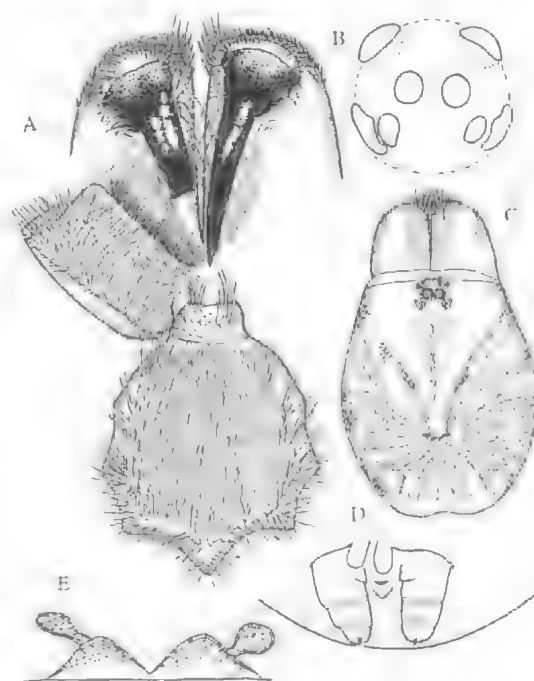


FIG. 204. *Orstom hydratemei* Raven & Churchill, sp. nov., holotype ♀ (QMS15470). A, sternum, maxilla, labium & chelicerae, ventral view; B, eyes, dorsal view; C, carapace & chelicerae, dorsal view; D, spinnerets, ventral view; E, spermathecae. Scale line = 2mm (A); 1mm (B, D); 4mm (C); 0.6mm (E).

## DIAGNOSIS

Females differ from those of *O. chazeau* in lacking dense clusters of spines on legs I, II, and from *O. macmillani* in the larger size, fewer teeth on the cheliceral promargin and having fewer less densely clustered cuspules on the maxillae.

Abdomen dark, without pattern. Maxillae with c.80-100 cuspules in inner triangle. FEMALES. No strong spines grouped on anterior legs. Preening combs present on metatarsi III, IV. Legs I-III much thicker than IV. Spermathecae a pair of rectanguloid mounds with long duct and spheroidal lobe projecting ectally. MALES. Unknown.

## ETYMOLOGY

A random combination of letters inspired by heavy water demands in climbing Mt Panié.

## DESCRIPTION

## HOLOTYPE FEMALE QMS15470

Carapace 9.92 long, 8.40 wide. Abdomen 9.67 long, 9.67 wide. Total length, 26.

*Colour.* Carapace and legs deep red brown, chelicerae dark brown, abdomen dorsally yellow brown.

*Carapace.* Lateral margin with bush of short fine hairs; fine black hairs forming reticulate pattern on interstrial ridges and along interstrial margins; fine black hairs uniformly on carapace. Bristles: line of thick black anteromedially, thickest in anterior half and posteriorly directed; 3 long setae and several shorter between PME, 3 long in front of AME, 7 small setae on clypeal margin; no thick setae near posterior striae. Fovea deep, procurved. Caput raised; thoracic region low. Striae glabrous, distinct. Clypeus absent. Group of setae in front of eyes on pallid elastic chitin between chelicerae and carapace.

*Eyes.* Group occupies 0.26 of head-width; front width: back width: length, 76:84:65. Tubercle distinct. AME:ALE:PME:PLE, 21:29:16:26. MOQ front:back:long, 48:57:41. Back row recurved. Eye interspaces: AME-AME, 0.3; AME-ALE, 0.8; ALE-ALE, 1.5; ALE-PLE, 1.1; PME-PLE, 0; PME-PME, 1.8.

*Chelicerae.* Robust with shallow depression on anterior lateral surface. Fine black setae in prodorsal band and smaller band laterally. Fangs thick, short. Rastellum a band of 15-20 stiff curved setae on distal edge. No intercheliceral setae or lyra. Promargin of furrow with 5 thick teeth, anteriorly with 3 thick and 2 smaller teeth then a group of 5-6 small teeth, posterior two

large teeth separated by cluster of 5-6 small teeth; furrow short with 6 teeth reaching to half length.

*Labium.* 1.16 long, 2.20 wide; anteriorly indented and with clusters of long curved setae on each lobe.

*Maxillae.* 2.92 long in front, 4.36 long behind, 1.80 wide; rectangular; with c.80-100 blunt cuspules on low mound on inner angle. Anterior lobe indistinct; heel angular, not strongly produced.

*Sternum.* 5.52 long, 4.72 wide. With long erect dense fine setae medially, and thicker black setae along margin. Posterior and middle sigilla small, oval, marginal; anterior pair not evident.

*Legs.* 4123. Palpal tarsi truncate. Legs I-III much thicker than IV. Glabrous bands: 2 dorsally on femora, patellae and tibiae, and 1 proximally on metatarsi. All tarsi broad. Basifemoral thorns and thorn spines absent. Preening combs: 9 setae in tight group retrolaterally on III; group of 5 long retrolaterally on IV.

	I	II	III	IV	Palp
Femur	6.96	6.08	4.80	7.04	5.12
Patella	5.04	4.64	3.60	4.40	3.20
Tibia	5.04	4.48	3.68	5.36	3.60
Metatarsus	4.16	3.68	3.76	5.84	-
Tarsus	1.76	1.92	1.84	2.24	2.56
Total	22.96	20.80	17.68	24.88	14.48

*Scopula.* Ventral surface of tarsi IV pallid. Metatarsi: I, II, full, broad, entire, continuous with claw tufts; III, mixed with setae, broad triangular area in distal 2/3; IV, 2 small triangular areas thin for distal 1/6. Tarsi: I, II, full, broad, dense, entire, continuous with claw tufts; III, full, entire but for several setae; IV, full, widely divided by setal band 6-10 wide.

*Spines.* I: fe p1 d3, pa 0, ti p1 v4, me 0. II: fe 0, pa 0, ti p2 v5, me 0. III: fe 0, pa 0, ti v9, me p2, r2, v6, IV: fe 0, pa 0, ti r2, v7, me p1, r2, v9. Palp: fe p1, pa p1, ti p7, v10, ta 0.

*Trichobothria.* Tibiae with c.10 for 1/3 their length; metatarsi with c.15-20 in curved row; tarsi with c.17-20 in wide group, all filiform.

*Claws.* All save palpal claw exposed above scopula; palpal claw bare, about half height of tufts. On I, 2 small teeth; IV, 1 small tooth.

*Spinnerets.* PMS 0.46 long, 0.14 wide, 0.08 apart, 0.47 of basal PLS in diameter. Basal, middle, apical, and total articles of PLS 0.64, 0.28, 0.20, 1.12 long, respectively.

*Spermathecae.* A pair of rectanguloid mounds with long duct and spheroidal lobe projecting ectally.

## REMARKS

Carapace length of other mature specimens was 11.28, 6.88 (penultimate ♂ = 7.44).

## DISTRIBUTION, BURROW &amp; HABITAT

Rainforest on the eastern slope of Mt Panié, at an altitude of about 700m, northern NC. More burrows were unsuccessfully sought at higher and lower altitudes. The burrow is typical of the genus at other locations. The door is thin and soft, wider than the burrow entrance and incorporates leaves. The burrow was sinuous, without branches, and about 10-15 cm long.

## MYGALOMORPHS SYMPATRIC

*Encyocrypta panie*, (Barychelidae); *Migas affinis* Berland (Migidae).

***Orstom macmillani* sp. nov.**  
(Figs 198, 205, Table 16)

## MATERIAL EXAMINED

TYPE. Holotype ♀, Mt Panié, 20°33'S 164°47'E, NC, 4000ft (1280m), 8-9 Aug 1939, L. Macmillan, AMNH.

## DIAGNOSIS

Females differ from those of *O. chazeau* in lacking the strong pair spines on legs I, II, and from *O. hydratemei* in the smaller size and more numerous teeth on the prolateral edge of cheliceral furrow.

Abdominal pattern obscured by dark colours. Maxillae with c.40-50 cuspules in inner triangle. FEMALES. No strong spines grouped on anterior legs. Preening combs on metatarsi IV; basifemoral thorns and thorn spines absent. Two broad low mound medially contiguous each with slender stalk and spherical apical lobe. MALES. Unknown.

## ETYMOLOGY

For L. MacMillan who collected the first material

FIG. 205. *Orstom macmillani* sp. nov., holotype ♀ (AMNH). A, carapace & chelicerae, dorsal view; B, sternum, maxillae & labium, ventral view; C, spinnerets, ventral view; D, spermathecae. Scale line = 2mm (A); 1mm (B, C); 0.5mm (D).

of *O. chazeau* and *O. macmillani*.

## DESCRIPTION

## HOLOTYPE FEMALE AMNH

Carapace 7.60 long, 6.16 wide. Abdomen 5.93 long, 3.93 wide. Total length, 14.

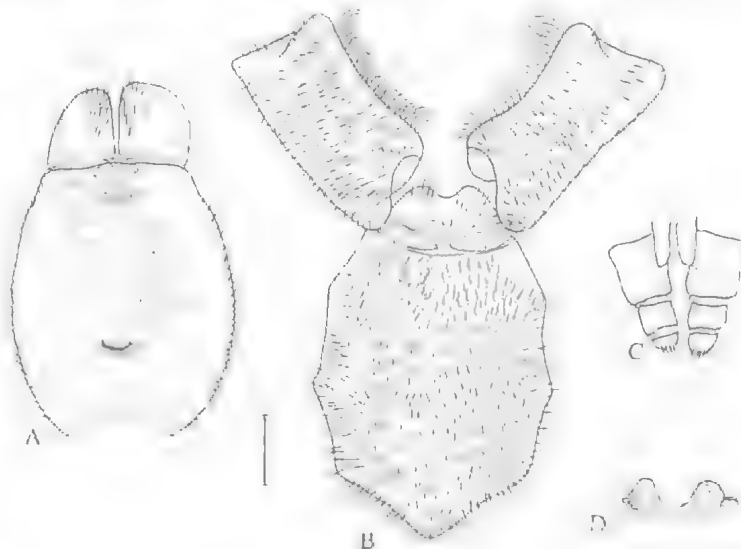
**Colour.** Carapace, chelicerae, and legs dark reddish brown, Abdomen dorsally and ventrally dark brown.

**Carapace.** Bristles: 1 long and several short between ALE; several on triangular region in front of ALE; 3 long and several short anteromedial. Striae distinct glabrous. Uniform light cover (not concealing cuticle) of fine golden brown hairs and bristles on stria margins and caput. Fovea short, deep, straight, with procurved ends.

**Eyes.** Group occupies 0.30 of head-width; front: back: long, 75:83:66. Tubercle low but distinct. AME:ALE:PME:PLE, 18:20:12:16. MOQ front:back:long, 42:42:35. Back row slightly procurved. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.7; ALE-ALE, 1.6; ALE-PLE, 1.7; PME-PLE, 0.3; PME-PME, 1.3.

**Chelicerae.** Bristles sparse on dorsal surface with few hairs. Rastellum of numerous long, curved bristles, not on mound. Promargin of furrow with 12 close teeth in sigmoid row, basomesally with 4 small teeth.

**Labium.** 0.72 long, 1.60 wide; labiosternal suture is two raised sigilloid areas; medially glabrous.





**Maxillae.** 2.40 long in front, 3.08 long behind, 1.24 wide; with c.40-50 cuspules spaced in inner triangle.

**Sternum.** 4.00 long, 3.12 wide. Sigilla, shape, length, and distance from margin of posterior oval, 0.36, 0.12; middle, oval, 0.28, 0.04; anterior, indistinct round, touching margin, 0.20 long and away.

**Legs.** Basifemoral thorns and thorn spines absent. Preening combs: 1 of 3 thick setae retrolaterally on IV.

**Scopula.** Metatarsi: I, II, entire, hairs long, in distal 2/3; III, thin, in distal 1/3; IV, absent. Tarsi: I, II, full, entire; III, divided by narrow band 4-6 setae wide; IV, thin, divided widely by setal band on ventral surface and wider than scopula bands.

	I	II	III	IV	Palp
Femur	5.50	5.00	4.17	5.83	4.00
Patella	3.83	3.33	2.83	3.50	2.83
Tibia	3.83	3.33	2.67	4.67	2.75
Metatarsus	3.33	2.67	3.00	5.17	-
Tarsus	1.67	1.67	1.50	1.83	2.25
Total	18.16	16.00	14.17	21.00	11.83

**Spines.** I: fe p1 d5, pa 0, ti p2 v5, me v1. II: fe p1 d2, pa 0, ti p3 v5, me v3. III: fe p1 d2, pa 0, ti r1 v8, me p2 r1 v11. IV: fe 0, pa 0, ti r2 v6, me p1 r2 v5. Palp: fe p1, pa p1 v1, ti p2 v6, ta 0.

**Trichobothria.** Tibia with c.10 for two-thirds its length; metatarsi with c.12 in curving line; tarsi with broad divided band of c.14 filiform, no clavates.

**Claws.** Legs I, IV with 4 teeth on medial ridge distally outcurved from below; palpal claw bare, well developed. All claws extend well above tufts.

**Spinnerets.** PMS 0.64 long, 0.24 wide, 0.12 apart, 0.45 of basal PLS in diameter. Basal, middle, apical, and total articles of PLS 0.84, 0.36, 0.20 long, respectively.

**Spermathecae.** Two broad low mound medially contiguous each with slender stalk and spherical apical lobe.

#### DISTRIBUTION & HABITAT

Rainforest dominated by *Agathis montana* at Mt Panié, Province Nord, NC, at about 1300m.

#### MYGALOMORPHS SYMPATRIC

*Encyocrypta panie*, *Orstom chazeau* (Barychelidae); *Migas affinis* Berland (Migidae).

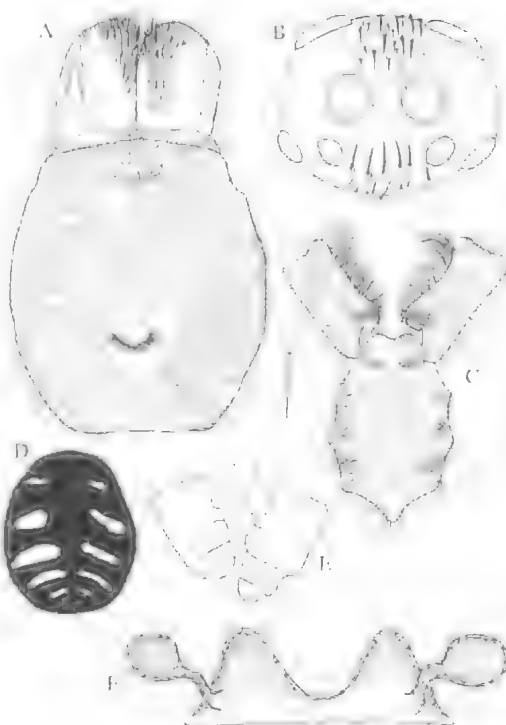


FIG. 206. *Orstom tropicus* sp. nov., holotype ♀ (QMS17751). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, sternum, maxillae & labium, ventral view; D, abdomen, dorsal view; E, spinnerets, ventral view; F, spermathecae. Scale line =2mm (A, C); 0.5mm (B); 4mm (D); 1mm (E); 0.25mm (F).

#### *Orstom tropicus* sp. nov. (Figs 198, 206. Table 16)

#### MATERIAL EXAMINED

TYPES. Holotype ♀, Col des Roussettes, Province Nord, NC, rainforest, c.490 m, 8 Sep 1990, RR, QMS17751; 2 paratype ♀♀, taken with it, QMS19047, 19093; 1 ♀ paratype, same data, in base of rotting tree fern, QMS17802; 3 ♀ paratypes, same data but PG, AMNH.

#### DIAGNOSIS

Females differ from those of *O. chazeau* in lacking the dense spines on tibia 1 and from *O. aoupinie* in the small, normally shaped PLE and preening combs on metatarsi III.

Abdominal pattern present but obscured by general darkening of dorsum. Maxillae with c.100 or more cuspules in inner angle and posteriorly. FEMALES. No strong spines grouped on anterior legs. Preening combs on



metatarsi III, IV. Fovea broad, strongly procurved. Two spermathecae, each a raised coniform mound with slender sinuous duct arising distally on dorsal surface leading to large spheroidal lobe. MALES. Unknown.

#### ETYMOLOGY

From *tropicus* (L.), a turning.

#### DESCRIPTION

##### HOLOTYPE FEMALE QMS17751

Carapace 9.69 long, 7.63 wide. Abdomen 10.60 long, 8.56 wide. Total length, 24.

**Colour.** Carapace very dark reddish brown, chelicerae darker brown, and legs brown, without annulations; sternum, maxillae, and labium reddish brown. Abdomen dorsally brown with five slightly paler paired areas discernible, anterior pair largest becoming smaller towards posterior; ventrally entirely brown.

**Carapace.** Uniform cover of fine black hairs on caput, hairs form bands on interstitial ridges; striae distinct, narrow, glabrous; margins of posterior striae without enlarged setae. Bristles: c.4 thick and many thin anteromedially; 1 very long and many finer between PME; one long and c.6-8 shorter between ALE; light pile of short hairs on lateral margins. Fovea broad, strongly procurved.

**Eyes.** Tubercle wide, low, but distinct. Back row straight. PLE small oval viewed from above. Group occupies 0.26 of head-width; group front width, back width, length, 96, 110, 78, respectively. MOQ front width, back width, length, 62, 71, 47, respectively. AME:ALE:PME:PLE, 25:35:15:23. Eye interspaces: AME-AME, 0.6; AME-ALE, 0.8; ALE-PLE, 1.6; PME-PME, 1.7; PME-PLE, 0.2; ALE-ALE, 1.5.

**Chelicerae.** Wide band of short black bristles and few longer prodorsally, laterally narrow glabrous band then narrow band of short bristles. Rastellum absent; distal bristles slender, weak. Furrow prominent with curved line of 8 large teeth mixed with 2-3 smaller teeth, basomesally with 10 small teeth mixed with promarginal row and 10-15 granules to half length of short furrow.

**Labium.** 0.94 long, 1.88 wide. Labiosternal suture is two narrow separated sigilla.

**Maxillae.** 3.00 long in front, 3.88 long behind, 1.56 wide; with c.100 or more densely clustered cuspules on distinct mound in inner angle and distally. Heel slightly produced, angular; anterior lobe broad, indistinct.

**Sternum.** 5.31 long, 4.13 wide. Noticeable posterior extension. Sigilla all oval, marginal; posterior pair c.14% of sternal width long.

	I	II	III	IV	Palp
Femur	6.88	6.13	5.44	7.00	5.00
Patella	4.69	4.38	3.81	4.38	3.25
Tibia	5.00	4.44	3.63	5.75	3.44
Metatarsus	3.25	3.44	3.63	5.81	-
Tarsus	1.69	1.69	1.63	2.06	2.50
Total	21.51	20.08	18.14	25.00	14.19

**Legs.** Basifemoral thorns and thorn spines absent. Preening combs: 1 of 5-7 long setae on retroventral III, IV. Glabrous bands dorsally on femora III without setae.

**Scopula.** Ventral surface of tarsi III, IV, pallid. Metatarsi: I, full, dense, entire; II, ventrally diagonal, full length on prolateral face, 2/3 length on retroventral, entire, dense; III, in distal 1/2, mixed with setae; IV, absent save for few hairs in two very narrow triangles. Tarsi: I, II, full, dense, entire; III, dense, mixed with setae; IV, dense, long, divided by setal band 10-12 wide.

**Spines.** I: fe p1, pa 0, ti p2, v8, me v1 basal, II: fe p1, pa v1w, ti p2, v7, me v1, III: fe 0, pa 0, ti v9, me p1, r1, v5. IV: fe 0, pa 0, ti r2, v9, me p1, r1, v9. Palp: fe p1w, pa v2, ti p8, v4+5 proventral.

**Claws.** 1-2 small teeth near medial keel (I, IV); palpal claw clearly smaller than tufts, bare.

**Trichobothria.** In two rows, each of c.12 for half length of tibiae; c.25 on metatarsi in short curving band for distal 2/3; c.30-40 filiform and c.3 fine clavate on tarsi.

**Spermathecae.** Two, each a raised coniform mound with slender sinuous ducts arising distally on dorsal surface leading to large spheroidal lobe.

**Spinnerets.** PMS 0.72 long, 0.38 wide, 0.25 apart, and c.0.40 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.31, 0.34, 0.25, 1.90 long, respectively.

#### DISTRIBUTION, HABITAT & BURROW

Rainforest at Col des Roussettes, central NC. Burrows had dorsally hinged wafer doors on the ground or raised just above it. Burrows were also found in rotting tree ferns. The burrows were found on a north facing slope.

#### SYMPATRIC MYGALOMORPHS

*Barychelus complexus*, *Barycheloides chiropteris*, *Encyocrypta berlundi* (Barychelidae).

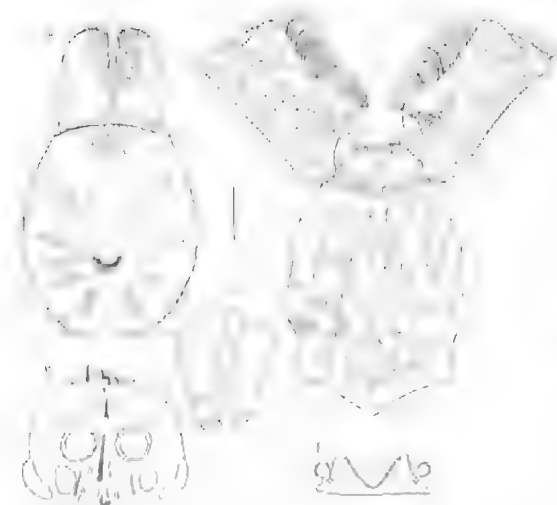


FIG. 207. *Orstom undecimatus* sp. nov., holotype ♀ (QMS19048). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, sternum, maxillae & labium, ventral view; D, spinnerets, ventral view; E, spermathecae. Scale line = 2mm (A); 1mm (C, D); 0.5mm (B, E).

***Orstom undecimatus* sp. nov.**  
(Figs 198, 207, Table 16)

**MATERIAL EXAMINED**

**TYPES.** Holotype ♀, Mt Mandjèlia, NC, rainforest, c.750m altitude, 12 Sep 1990, PAG, AMNH; paratype ♀, same data, QMS19048.

**OTHER MATERIAL EXAMINED.** Juv, same locality, 17 Feb 1993, RR, QMS19712.

**DIAGNOSIS**

Females differ from those of all other species in the short U-shaped fovea.

Abdominal pattern present but obscured by general darkening of dorsum. Maxillae with c.60-70 cuspules in inner angle and posteriorly. **FEMALES.** No strong spines grouped on anterior legs. Preening combs on metatarsi III, IV. Fovea U-shaped, very deeply procurved. Two spermathecae, each a high coniform lobe with short lobe arising from outer upper corner of dorsal face. **MALES.** Unknown.

**ETYMOLOGY**

From the latin 'eleven' at which morning hour many discoveries were made at Mandjèlia.

**DESCRIPTION**

**HOLOTYPE FEMALE QMS19048**

Carapace 7.81 long, 6.75 wide. Abdomen 8.75 long, 6.06 wide. Total length, 19.

**Colour.** Carapace and chelicerae dark reddish brown, carapace paler around posterior margins, legs dark orange brown not annulated; sternum, maxillae, and labium dark orange brown. Abdomen dorsally dark brown with four pairs of large lighter brown patches; ventrally yellow brown.

**Carapace.** Pilosity: lines of fine black hair on caput and interstrial ridges; striae barely distinct, narrow, glabrous. Bristles: 10 long and several finer anteromedially and many in band beside caput; three long and several finer between PME, one long thick in front of AME, and 4 shorter and 6-8 finer between ALE; lateral margins with 1-4 (around posterior corners) bands of long black bristles and few hairs. Fovea U-shaped, very deeply procurved. Clypeus absent; small oval sclerotised hairs of cuticle in front of eyes.

**Eyes.** Tubercle low, distinct. Group occupies 0.26 of head-width; front width, back width, length, 50, 60, 43, respectively. Back row slightly recurved. MOQ front width, back width, length, 32, 37, 24, respectively. AME:ALE:PME:PLE, 12:18:10:17. Eye interspaces: AME-AME, 0.6; AME-ALE, 1.0; ALE-PLE, 1.4; PME-PME, 1.9; PME-PLE, 0.2; ALE-ALE, 1.8.

**Chelicerae.** Narrow band of few long black and many short bristles prodorsally, laterally a narrow band of short setae. Rastellum and mound absent, few long weak tapering bristles overhang fang. Furrow promargin with 9 large close teeth in basally curving row mixed with 3 smaller teeth, basomesally with 4 small teeth and c.14 granules to half length of furrow.

**Labium.** 0.72 long, 1.40 wide. Labiosternal suture two separated plate-like sigilla.

**Maxillae.** 2.20 long in front, 3.12 long behind, 1.44 wide; with c.60-70 cuspules in inner angle and back to posterior margin. Heel broad; anterior lobe, indistinct.

**Sternum.** 4.31 long, 3.18 wide. Sigilla: posterior pair c.8% of sternal width; 1.05 long; deeply impressed, oval, margin; others smaller, indistinct, oval, marginal.

	I	II	III	IV	Palp
Femur	5.38	4.94	4.25	6.25	3.94
Patella	3.69	3.38	3.00	3.44	2.69
Tibia	3.75	3.44	2.81	4.63	2.81
Metatarsus	2.75	2.63	2.81	5.00	-
Tarsus	1.44	1.50	1.25	1.63	2.00
Total	17.01	15.89	14.12	20.95	11.44

**Legs.** Basifemoral thorns and thorn spines absent. Preening combs: 1 of 3-4 setae on retroventral III, IV.

**Scopula.** Metatarsi, long on prolateral face, a diagonal line ventrally so extent of hairs much shorter (half prolateral) on retroventral and -lateral faces: I, II, full, dense, entire; III, thin, long hair, mixed with setae in distal 2/5; IV, absent. Tarsi: I, II, full, dense, entire; III, full, dense, mixed with totally 12 setae, not divided; IV, only laterally, hairs sparse, divided by setal band 4-8 wide.

**Spines.** Femora I-IV with slightly longer spinelike bristle basally. I: fe p1, d1w, pa v1, ti p2, v6, me v2 (proximal and distal on retroventral edge). II: fe p1, d5, pa p1, ti p2, v6, me v3 (like me I, basal spine very long). III: fe p3w, d5w, r3w, pa p1w, v1, ti p1, r1, v8, me p2, r2, v6. IV: fe d5w, r1w, pa 0, ti r2, v8, me p2, r1, v6. Palp: fe p1w, pa v2 strong, ti p2, v7.

**Claws.** 2 (IV)-3 (I) small teeth medially. On IV, claws long, slender; all leg claws higher than tufts; palpal claw slightly smaller than tufts, bare.

**Trichobothria.** In two rows, each of c.9 for half of tibiae; c.15 on metatarsi in curving row, distally a band; c.4 small clavate and c.20 filiform on tarsi.

**Spermathecae.** Two, each a high coniform lobe with short lobe arising from outer upper corner of the dorsal face.

**Spinnerets.** PMS 0.63 long, 0.25 wide, 0.08 apart, and c.0.40 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.08, 0.35, 0.20, 1.63 long, respectively.

#### DISTRIBUTION & HABITAT

Rainforest at Mt Mandjelia, just south of Bondé, Province Nord, NC. The burrow was similar to that of *O. anupinie*.

#### SYMPATRIC MYGALOMORPHS

*Mandjelia platnicki*, *Encyocrypta grandis*, *Encyocrypta bertini* (Barychelidae).

#### *Questocrypta* gen. nov.

#### DIAGNOSIS

*Questocrypta* resembles *Encyocrypta* from which it is readily distinguished in the numerous cuspsules on a distinct mound on the maxillae.

#### DESCRIPTION

**FEMALES.** Carapace ovate, lightly hirsute, with bold black markings and fine black setae; enlarged setae beside posterior striae and

anteromedially. Caput lightly arched; striae, narrow distinct; lateral margins lightly setose. Fovea broad, deep, transverse, straight with small circular areas medially and laterally. Eye group widely rectangular; tubercle distinct; eyes in 3 rows. Clypeus absent. Chelicerae short, stout; rastellum absent; rastellar mound barely evident; furrow with many teeth on promargin; basomesally a cluster of small teeth and granules. No modifications evident on cheliceral faces. Maxillae longer than wide; heel slightly produced; anterior lobe short defined by long groove; many (100) small cuspsules densely clustered on inner angle of maxillae on centrally raised dome. Cuspsule microstructure: c.40-50  $\mu$ m in maximum diameter; intercrest distance, 3-5  $\mu$ m apart; profile, very short, bilaterally uniform balloon; ridge direction, continuous over smooth crest, like thumbprints; cuspsule interspace, 2 or more diameters. Labium wider than long, no cuspsules, suture broad, low. Sternum wide, cordate; all sigilla small, marginal, oval. Legs moderately stout, setose but not hirsute save for adpressed grey hairs. Thorn spines, preening combs and basifemoral thorns absent. Claws: two teeth in medial keel (I); one long distinctly in outer row on IV; palpal claw large, bare. Two rows of trichobothria on tibiae, one very short strongly curved row on metatarsi, two rows on tarsi with few clavates. Claws tufts small, narrow in cross-section, not continuous with scopula; distinct on palp. Scopula full and entire on metatarsi and tarsi I, II and extend for lower 200° of articles; effectively absent on metatarsi III, IV; widely divided on tarsi III, IV. Legs lightly spinose. Abdomen lightly hirsute, dorsally maculate, ventrally pallid with brown areas. PMS well developed, few spigots evident apically; PLS comparatively small, short. Spermathecae two, each a small coniform mound with wide lateral lobe and large spheroidal apex. MALES. Unknown.

#### TYPE SPECIES

*Questocrypta goloboffi* sp. nov.

#### ETYMOLOGY

The generic epithet alludes to the quest to find more about this very rare genus. The gender is feminine.

#### DISTRIBUTION, BURROW & HABITAT

As for species.

## INCLUDED SPECIES

*Questocrypta goloboffi* sp. nov.

*Questocrypta goloboffi* sp. nov.

(Figs 7B, C, 20D, 198, 208, Table 16)

## MATERIAL EXAMINED

TYPES. Holotype ♀, M1 Aoupinié, 21°10'S, 165°18'E, altitude c. 1000m, 10 Sep 1990, PG, AMNH. Paratypes: 3 ♀♀ taken with holotype, AMNH; 1 ♀, same data, QMS19091; 1 ♀♀, same data, NP, 12 Feb 1993, AMNH.

## DIAGNOSIS

Differs from *Orstum aoupinié* by mottled abdominal pattern, and straight fovea, and from *Natgeogia rastellata* in lacking such a strong rastellum.

Spermathecae two, each a small coniform mound with wide lateral lobe and large spheroidal apex.

## ETYMOLOGY

For Pablo A. Goloboff.

## DESCRIPTION

## HOLOTYPE FEMALE AMNH

Carapace 7.25 long, 6.75 wide. Abdomen 10.00 long, 8.75 wide. Total length, 19.

**Colour.** Carapace orange brown with brown ornate areas on caput and lateral margins, brown reticulated areas on interstrial ridges, chelicerae red brown, and legs orange brown without annulations. Abdomen dorsally brown with large irregularly shaped white spots; spots confluent anteriorly to form large white area; ventrally brown with pallid areas centrally and laterally and forming Vee in front of spinnerets.

**Carapace.** Deep transverse groove behind eye group, plus two unpaired transverse grooves over lateral caput and striae and one medially behind those. Bristles: uniform cover of short black setae and longer on caput and interstrial ridges; striae narrow, distinct; 6-8 long erect black beside posterior striae; c.9 thick black anteromedially and many thinner but long beside caput; 3 long and 8-12 finer between PME, and 4 long and 8-10 finer between ALE; band of long slender black on lateral margins. Fovea straight with medial and lateral 'pinholes'.

**Eyes.** Tubercle distinct, AME set in groove (possibly artifact of imperfect moulting) so that ALE are higher. Back row procurved. Group is 0.34 of head-width; front width, back width, length, 45, 53, 37, respectively. MOQ front width, back width, length, 34, 37, 22, respective-

ly. AME:ALE:PME:PLE, 11:18:9:12. Eye interspaces: AME-AME, 0.8; AME-ALE, 0.8; ALE-PLE, 1.4; PME-PME, 1.8; PME-PLE, 0; ALE-ALE, 1.6.

**Chelicerae.** Small, geniculate. Narrow band of long erect black bristles prodorsally, laterally a sparse band of short setae. Rastellum and mound absent, long curved setae overhang fang. Furrow promargin with 7 large mixed with 8 smaller teeth, basomesally with 6-8 small teeth.

**Labium.** 0.60 long, 1.28 wide. Lightly hirsute, transverse ridge absent, 5 setae in line across midpoint. Labiosternal suture a shallow glabrous area of two separate sigilla.

**Maxillae.** 2.00 long in front, 2.80 long behind, 1.24 wide; with c.100-120 cuspsules on distinct mound in inner angle and towards heel. Heel produced, rounded; anterior lobe indistinct.

**Sternum.** 3.68 long, 3.32 wide. Sigilla all subcircular, small, marginal.

**Legs.** Uniform but light cover of setae and slender adpressed grey hairs. Thorn spines, preening combs and basifemoral thorns absent.

	I	II	III	IV	Palp
Femur	4.50	3.88	3.19	5.13	3.44
Patella	3.31	2.81	2.38	2.88	2.19
Tibia	3.19	2.69	2.38	3.75	2.19
Metatarsus	2.31	2.31	2.88	4.69	-
Tarsus	1.31	1.44	1.88	1.88	1.69
Total	14.62	13.13	12.39	18.33	9.51

**Scapula.** Metatarsi: I, II, full, dense, entire save for few scattered setae on II; III, absent save for few scattered hairs; IV, absent. Tarsi: I, full, dense, entire; II, like I, but setal band 4-6 mixed with distal half; III, IV, widely divided by setal band 10-12 wide.

**Spines.** I: fe plw, pa 0, ti v1, me 0. II: fe plw, pa 0, ti v1, me v0. III: fe pl, dlw, r1, pa p3, r1, ti p1, r1, v8, me p3, r2, v5. IV: fe dlw long basal, r1, pa r1, ti r4, v9, me p3, r4, v8. Palp: fe plw, pa 0, ti p2, v3.

**Spermathecae.** Two, each a small coniform mound with wide lateral lobe and large spheroidal apex.

**Claws.** One long and one small tooth on leg I in medial keel; one long, distinctly in outer row on leg IV; palpal claw large, bare.

**Trichobothria.** In two rows, each of c.11 for 2/3 of tibiae; c.16 on metatarsi in short strongly curving row; c.3 clavate and c.20 filiform on tarsi.

**Spinnerets.** PMS 0.43 long, 0.25 wide, 0.20 apart, and c.0.37 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 0.95, 0.30, 0.20, 1.45 long, respectively.

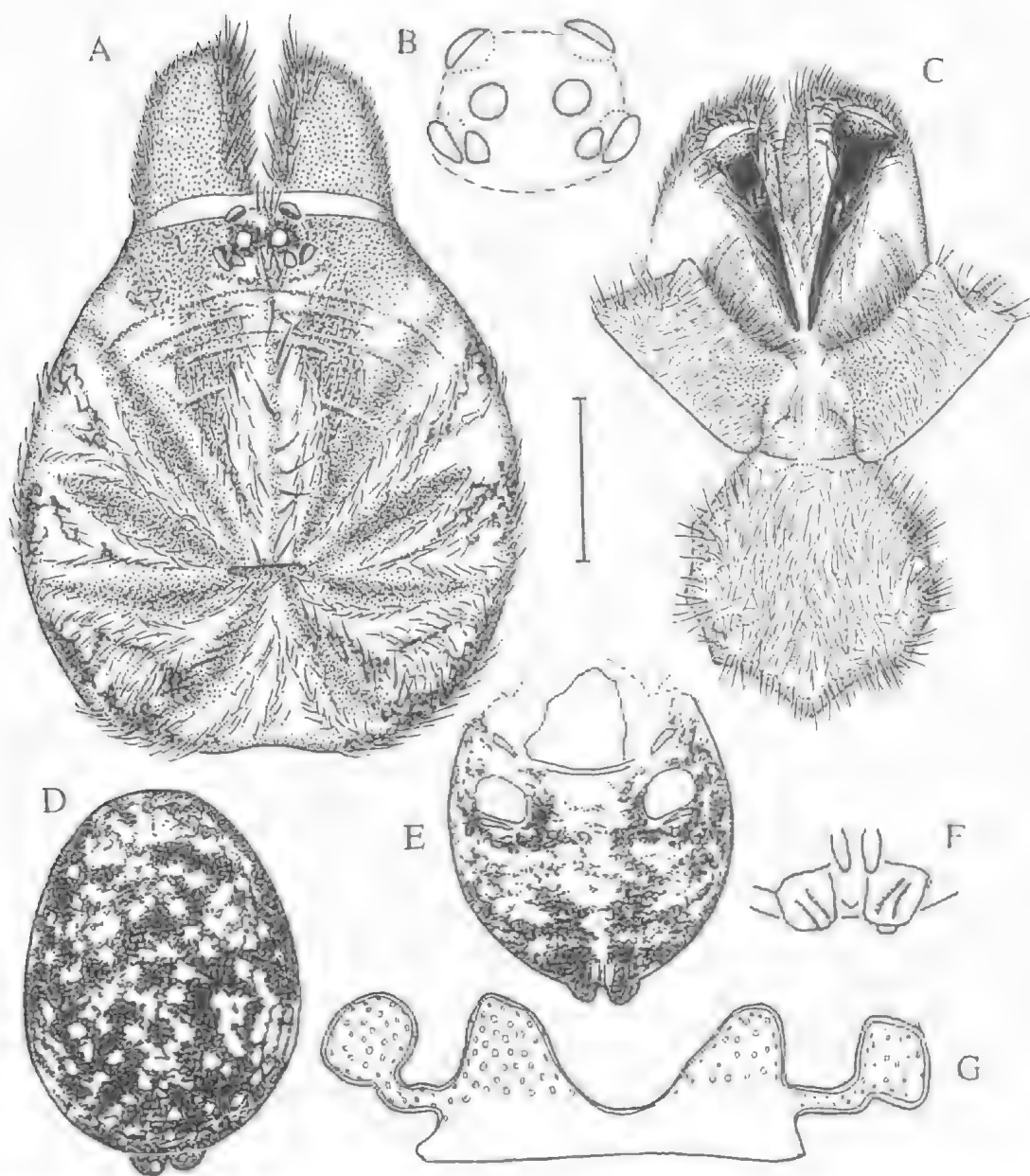


FIG. 208. *Questecrypta galohoffi* sp. nov., holotype ♀. A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, chelicerae, sternum, maxillae & labium, ventral view; D, E, abdomen, dorsal view (D), ventral view (E); F, spinnerets, ventral view; G, spermathecae. Scale line = 3mm (A, C, F); 1.44mm (B); 6mm (D, E); 0.25mm (G).

#### DISTRIBUTION, BURROW & HABITAT

Rainforest at Mt Aoupinié, at c.1000m. The spiders were found in leaf litter in soft silken cells 2-4cm long with a soft dorsally hinged door at each end.

#### NEW GUINEA & OTHER PACIFIC ISLANDS

##### THE MYGALOMORPH FAUNA OF FIJI

Apart from *Idioetes* (Churchill & Raven, 1992) and *Masteria* (Raven, 1979), a juvenile *Sason* (QMS16636) was taken from the Namosi-

Queens Road Divide in rainforest at 500m on Viti Levu. Although on other Pacific Islands, no theraphosids are known from Fiji.

**Fijocrypta** gen. nov.

**DIAGNOSIS**

As for species.

**ETYMOLOGY**

From Fiji and *crypta* (L.), hidden.

**REMARKS**

*Fijocrypta* differs from most barychelid genera in the Western Pacific in lacking a tibial spur in ♂♂ and from *Seqocrypta* and *Moruga* in ♂♂ having two rows of teeth on the claws but the embolus lacks a filiform tip.

**TYPE SPECIES**

*Fijocrypta vitilevu* sp. nov.

**INCLUDED SPECIES**

*Fijocrypta vitilevu* sp. nov.

**DISTRIBUTION & HABITAT**

Rainforest on Viti Levu, Fiji.

*Fijocrypta vitilevu* sp. nov.

(Figs 9G, H, 21B, 71, 210-212, Table 16)

**MATERIAL EXAMINED**

**TYPES.** Holotype ♂, Namosi-Queens Rd Divide, Viti Levu, Fiji, 18°05'S 178°10'E, rainforest at 500m, pyrethrum sampling of moss, 23 Jul 1987, GBM, DC, QMS17833; allotype ♀, Nausori Highlands, Viti Levu, Fiji, 17°47'S 177°40'E, rainforest at 600m, sieved litter, 13 Jul 1987, GBM, QMS19078.

**DIAGNOSIS**

Males differ from those of all other barychelids in the Western Pacific, save *Seqocrypta jakara*, *S. hamlynharrisi*, *S. bancrofti*, in lacking a spur on tibia I; they differ from those three having two rows of teeth on the claws of leg I and having very weak scopula on legs I, II.

PMS well developed. Maxillae with c.3-6 cuspules; labium without cuspules. Abdomen mottled; legs not annulated. Rastellum absent. FEMALES. Basifemoral thorns and preening combs absent. Scopula absent on metatarsi III, IV. Spermathecae two, each a large triangular mound with short lateral stalk with slightly enlarged apex. MALES. Tibia I slender, cylindrical without modification. Palpal bulb pyriform with gradual taper to short blunt embolus; keels ab-

sent; cymbium bilobed, lobes very unequal with strong distal constriction. Claws of leg I with two flared, high, and distal rows; leg IV with one row of teeth on upper outer faces of each claw; all claws of similar size.

**ETYMOLOGY**

From the native name of the island locality.

**DESCRIPTION**

**HOLOTYPE MALE** QMS17833

Carapace 4.38 long, 3.94 wide. Abdomen 4.06 long, 2.94 wide. Total length, 9.

**Colour.** Carapace orange brown with darker areas on caput, in fine lines along interstitial ridges and on margins, chelicerae orange brown, and legs yellow brown without annulations. Abdomen dorsally brown with many small white spots; ventrally equally brown and white.

**Carapace.** Pilosity: fine silver grey hairs on interstitial ridges and caput; striae shallow, indistinct. Bristles: 2 small black beside posterior striae; 5 small black and several finer setae anteromedially; 2 long and 6-8 finer between PME, and one long thick and 4-6 finer between ALE; 2-3 rows of short bristles on lateral margins reaching from posterior corners to anterior third. Fovea short, straight.

**Eyes.** Tubercle distinct, raised. Group occupies 0.38 of head-width; front width, back width, length, 29, 34, 26, respectively. Back row procurved. MOQ front width, back width, length, 22, 25, 17, respectively. AME:ALE:PME:PLE, 11:12:6:9. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.4; ALE-PLE, 0.8; PME-PME, 1.3; PME-PLE, 0; ALE-ALE, 0.9.

**Chelicerae.** Narrow sparse band of short bristles on transversely corrugated prodorsal surface, laterally with narrow band of fine setae. Rastellum absent, but line of thicker setae overhang fang base. Furrow promargin with 8 small spaced teeth, basomesally with 10-15 granules. Interhelical tumescence and lyra absent.

**Labium.** 0.38 long, 0.78 wide; 9 thick setae medially and 6-8 fine along posterior edge, strong setae on leading edge. Labiosternal suture two narrow separated sigilla.

**Maxillae.** 1.13 long in front, 1.50 long behind, 0.63 wide; with 2-3 cuspules in inner angle. Heel angular; anterior lobe distinct, small.

**Sternum.** 2.33 long, 2.00 wide; anterior margins hirsute, posterior margins setose. Sigilla all very small, marginal, oval. Three pairs of slit sensilla evident opposite coxae I-II, III, and IV.



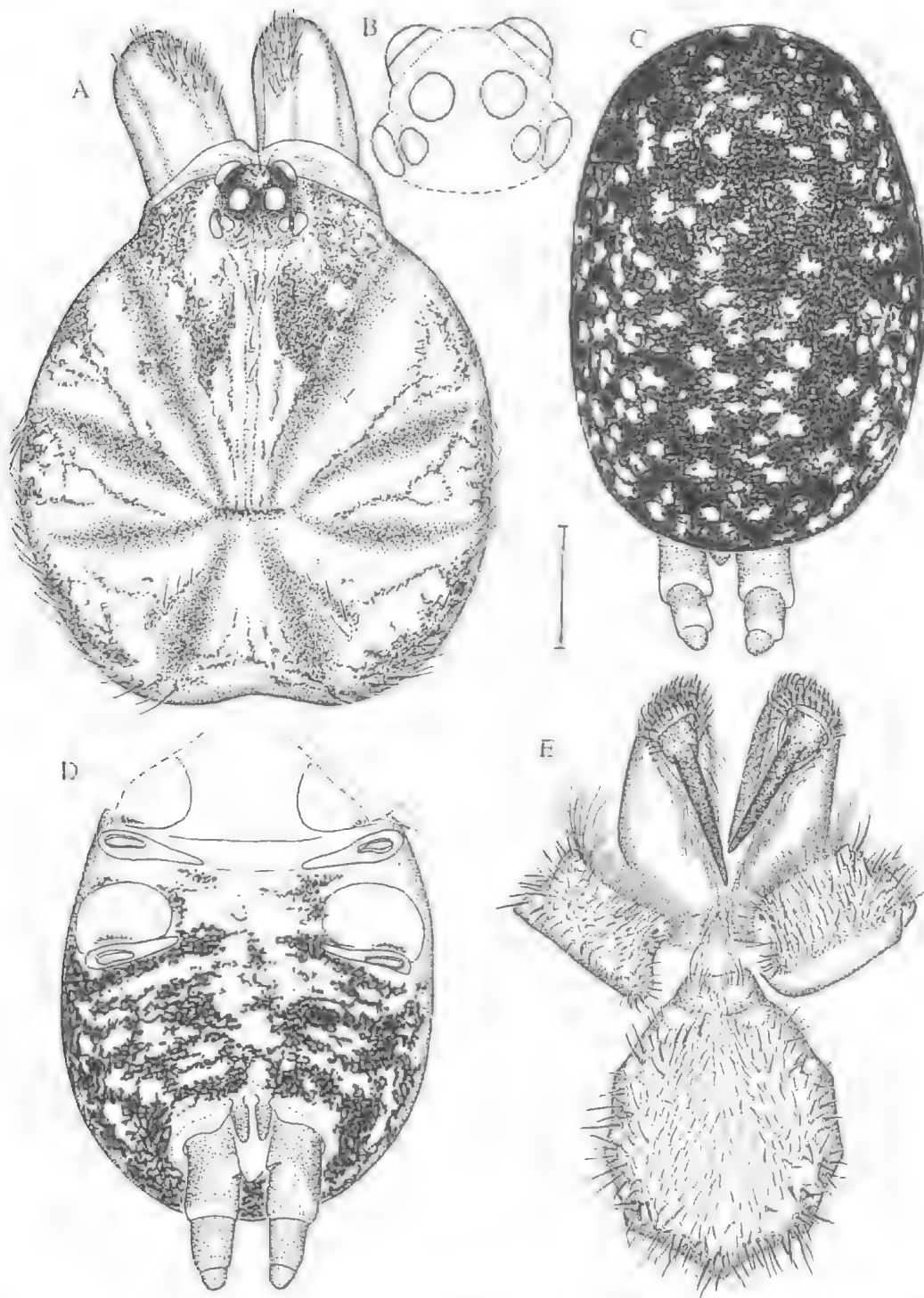


FIG. 209. *Fijocrypta vitilevu* sp. nov., holotype ♂ (QMS17833). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, D, abdomen, dorsal (C), ventral view (D); E, chelicerae, sternum, maxillae & labium, ventral view. Scale line = 1mm (A, C-E); 0.5mm (B).



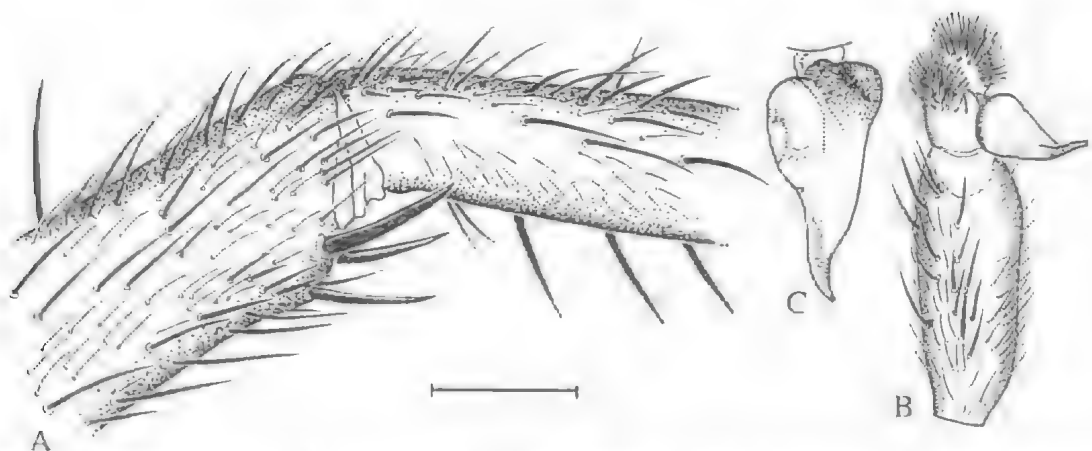


FIG. 210. *Eyoerypta vitilevu* sp. nov., holotype ♂ (QMS17833). A, tibia & metatarsus I, prolateral view; B, cymbium & palpal bulb, ventral view; C, palpal bulb, retrolateral view. Scale line = 1 mm (A, C); 2 mm (B)

**Legs.** Tibia I slender, cylindrical without obvious modification. Thorn spines, preening combs and basifemoral thorns absent. Covered with long and short bristles and long brown hairs.

	I	II	III	IV	Palp
Femur	3.92	3.44	3.08	4.40	2.20
Patella	2.32	2.16	1.72	2.00	1.40
Tibia	3.20	2.88	2.40	3.84	1.60
Metatarsus	2.52	2.48	2.60	4.12	—
Tarsus	1.28	1.40	1.08	1.40	0.92
Total	13.24	12.36	10.88	15.76	6.12

**Scopula.** Scopulate areas of metatarsi and tarsi pallid but not incrassate. Hairs short, tarsal scopula shorter and discontinuous with tufts. Metatarsi: I, II, very sparse, distal 1/2, with 2-3 rows of dividing setae; III, IV, absent. Tarsi: I, II, sparse, short, full, entire; III, very sparse, divided by setal band 2-3 wide; IV, similar to III but even thinner.

**Spines.** Long spine on midventral metatarsi I, fe d3w, pa 0, ti v6, me v1; II, fe d3w, pa 0, ti v3, me v1; III, fe p1, d3w, pa p2, ti p2, r1, v3, me p2, r2, v4; IV, fe d3w, pa 0, ti p1, r2, v3, me p2, r2, v5; palp, fe d2w, rest 0.

**Claws.** All of similar size; 6 teeth in each of 2 slightly flared, high, and distal rows on I; IV with one row of 2 small teeth on upper outer faces of each claw.

**Trichobothria.** Two rows, each of c.7 for 2/3 of tibiae; c.16 on metatarsi in strongly curving row, distally forming two rows; c.16 filiform and c.4 fine short clavate in two rows on tarsi.

**Palp.** Bulb pyriform with gradual taper to short blunt embolus; keels absent; cymbium bilobed, lobes very unequal with strong distal constriction. Tibia ventrally grooved fang slightly incrassate

for distal third. Retrolateral margin of cymbium straight.

**Spinnerets.** PMS 0.35 long, 0.10 wide, 0.08 apart, and c.0.25 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 0.70, 0.25, 0.15, 1.10 long, respectively.

#### ALLOTYPE FEMALE QMS19078

Carapace 4.80 long, 4.16 wide. Abdomen 5.04 long, 3.20 wide. Total length, 11.

**Colour.** Carapace orange brown with brown areas on caput, along margins and in fine lines on interstrial ridges, chelicerae and legs orange brown, legs not annulated. Abdomen dorsally brown with many pallid spots in diagonal paired lines forming pallid chevrons posteriorly; ventrally pallid with small brown dendritic lines medially and posteriorly.

**Carapace.** Pilosity: a light pile of fine gray hairs on interstrial ridges; striae indistinct, shallow. Bristles: 2-4 erect black beside posterior striae; 8 thick black anteromedially and many beside caput; 4 long thick and 8-10 finer between PME, and 5 long thick and 4-6 finer between ALE; fine hairs and bristles on lateral margins. Fovea short, procurved.

**Eyes.** Tubercle raised, distinct. Back row straight. Group occupies 0.29 of head-width; front width, back width, length, 28, 35, 28, respectively. MOQ front width, back width, length, 23, 25, 17, respectively. AME:ALE: PME:PLE, 10:11:6:8. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.6; ALE-PLE, 1.1; PME-PME, 1.5; PME-PLE, 0.1; ALE-ALE, 1.1.

**Chelicerae.** Wide sparse band of long black bristles prodorsally, laterally a single setal line

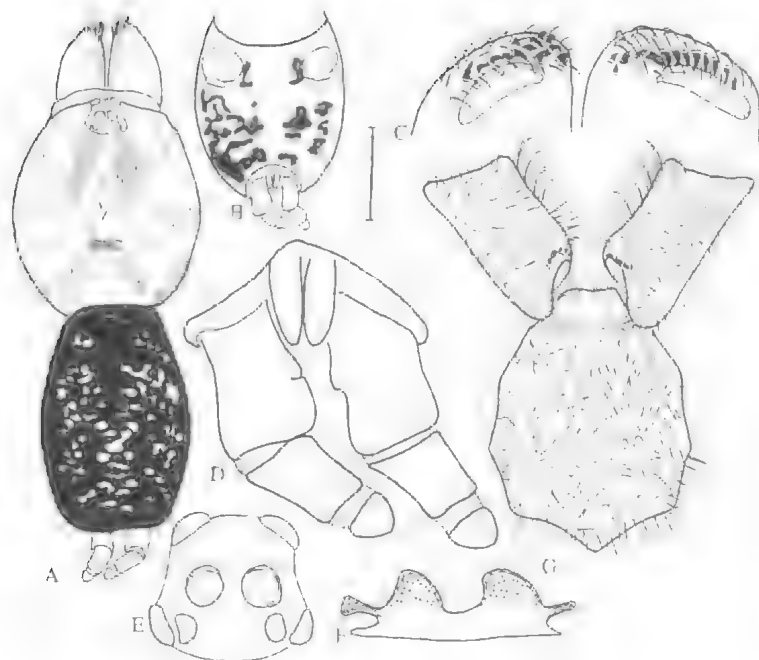


FIG. 211. *Fijocrypta vitilevu* sp. nov., allotype ♀ (QMS19078). A, carapace, chelicerae & abdomen, dorsal view; B, abdomen, ventral view; C, apical chelicerae with rastellum; D, spinnerets, ventral view; E, eyes, dorsal view; F, spermathecae; G, sternum, maxillae & labium, ventral view. Scale line = 2mm (A, B); 1mm (G); 0.5mm (C-E); 0.25 (F).

**Legs.** Light pile of hairs and bristles. Thorn spines and basifemoral thorns absent. Preening combs absent, but two weakly paired setae retroventral on III.

**Scopula.** On lower 180–200° of tarsi. Metatarsi: I, full, dense; II, for full length on retrolateral face, half length on prolateral, entire; III, absent save for few scattered hairs; IV, absent. Tarsi: I, II, full, dense,

entire; III, divided by setal band 2–3 wide; IV, divided by setal band 6–8 wide.

**Spines.** I, fe p1, d3w, pa 0, ti 0, me 0; II, fe p1, d3w, pa 0, ti p1, me 0; III, fe p1, d4w, r1, pa p2, ti p2, r1, v6, me p3, r2, v6; IV, fe 0, pa r1w, ti r2, v9, me p2, r2, v8; palp, fe p1, pa 0, ti p1, v5.

**Claws.** One long and one smaller tooth on claws on medial keel of legs I, IV. Claw tufts enclose claws. Palpal claw small, c.one-third height of tufts, bare.

**Trichobothria.** Two rows, each of c.10 for two-thirds of tibiae; c.10 on metatarsi in strongly curved row; c.15 filiform and 3–4 clavate on tarsi.

**Spermathecae.** Two, each a large triangular mound with short lateral stalk with slightly enlarged apex.

**Spinnerets.** PMS 0.40 long, 0.13 wide, 0.05 apart, and c.0.26 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 0.65, 0.35, 0.18, 1.18 long, respectively.

breaks glabrous region. Rastellum absent, but line of 8–10 thicker bristles overhang fang. Furrow promargin with 6 large mixed with 3 smaller teeth, basomesally with few small granules.

**Labium.** 0.40 long, 0.88 wide; strong bristles on leading edge, line of 3 thick bristles on transverse ridge and 3 more in line behind that, 6–8 fine bristles along posterior margin. Labiosternal suture of two narrow sigilla joined medially.

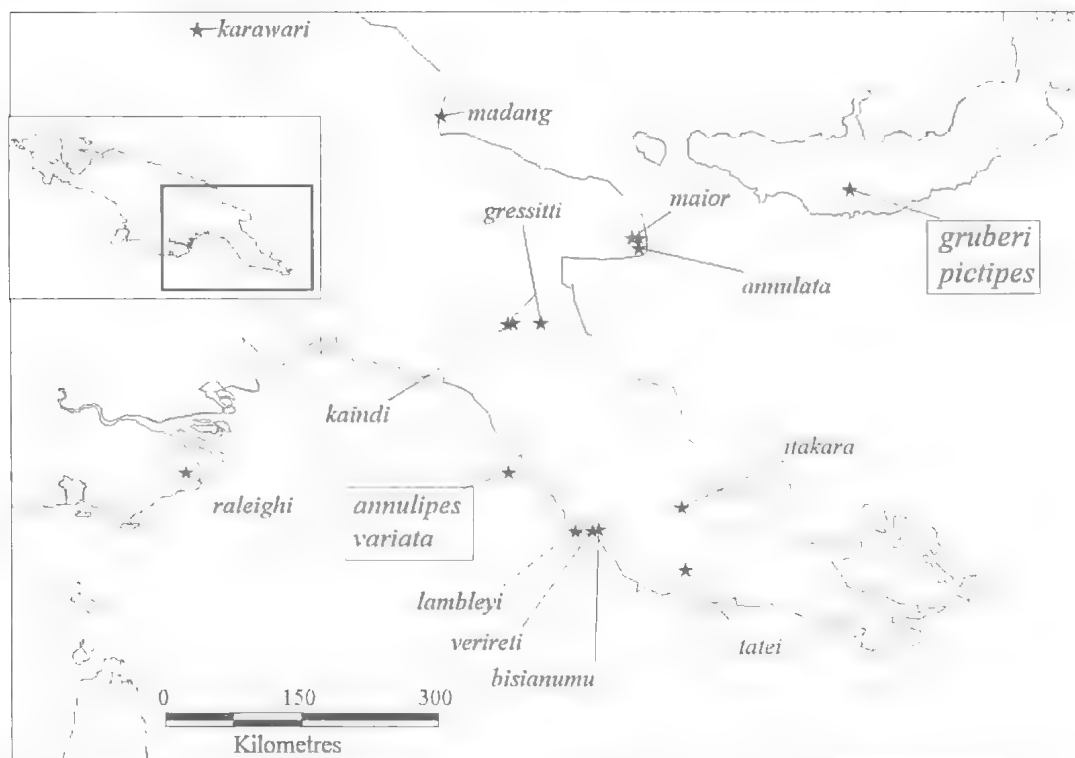
**Maxillae.** 1.25 long in front, 1.90 long behind, 0.83 wide; with 4–6 cuspules in inner angle. Heel narrow, angular; anterior lobe indistinct. Cuspule microstructure: c.55µm in maximum diameter; interest distance, c.0.8µm apart; profile, tapering spindle-like cones; ridge direction, continuous over smooth crest, like thumbprints; cuspule interspace, 2 or more diameters. Labium wide, with or without cuspules.

**Sternum.** 2.55 long, 2.13 wide; fine hair and bristles on margins. Sigilla all small, marginal, oval.

	I	II	III	IV	Palp
Femur	3.13	2.69	2.38	3.75	2.13
Patella	2.13	2.00	1.63	2.00	1.50
Tibia	2.06	1.88	1.56	2.88	1.25
Metatarsus	1.38	1.31	2.19	2.94	—
Tarsus	0.94	0.94	1.13	1.13	1.44
Total	9.64	8.82	8.45	12.70	6.32

#### DISTRIBUTION & HABITAT

Rainforest on the eastern highlands of the island of Viti Levu, Fiji.

FIG. 212. Records of *Nihoa* in the western Pacific.

### KEY TO *NIHOA* AND *FIJOCRYPTA* SPECIES IN WESTERN PACIFIC

#### FEMALES

1. Abdomen dorsally without mottling or pattern . . . . . 2  
Abdomen with distinct dorsal pattern . . . . . 5
- 2(1). Basifemoral thorn setae on I, II, IV . . . . . 3  
Basifemoral thorn setae absent . . . . . 4
- 3(2). Lateral eye ratio  $\gg 1$  . . . . . *N. aussereri*  
Lateral eye ratio  $< 1$  . . . . . *N. annulata*
- 4(2). Lateral eye ratio  $\gg 1$  and ventral abdomen with pallid areas . . . . . *N. annulipes*  
Lateral eye ratio  $< 1$  and abdomen entirely black . . . . . *N. maior*
- 5(1). Scopula on metatarsi I confined to distal third . . . . . 6  
Scopula for full length of metatarsi I . . . . . 7
- 6(5). Preening combs present on III, IV . . . . . *N. kaindi*  
Preening combs entirely absent . . . . . *N. tatei*
- 7(5). Basifemoral thorn setae entirely absent . . . . . 8  
Basifemoral thorn setae present . . . . . 11
- 8(7). Anterior lateral eyes about as far from each other as from posterior lateral eyes . . . . . 9  
Lateral eye ratio clearly less than 1 . . . . . 10

- 9(8). Preening combs present on legs III, IV . . . . . *N. variata*  
Preening combs entirely absent . . . . . *Fijocrypta vitilevu*
- 10(8). Legs not banded and preening combs present on III, IV . . . . . *N. vanuatu*  
Legs clearly banded and preening combs entirely absent . . . . . *N. pictipes*
- 11(7). Scopula distally on metatarsi III . . . . . 12  
Scopula entirely absent on metatarsi III . . . . . *N. gressitti*
- 12(11). Legs III, IV distinctly banded . . . . . 13  
Legs III, IV without banding . . . . . *N. bisianumu*
- 13(12). Scopula present distally on metatarsi IV . . . . . *N. karawari*  
Scopula entirely absent on metatarsi IV . . . . . 14
- 14(13). Spermathecae are two antennate domes (Fig. 222D); preening combs present . . . . . *N. itakara*  
Spermathecae are 4 separate lobes (Fig. 235E); preening combs absent . . . . . *N. verireti*

#### MALES

1. Claws of leg I with 2 rows of teeth . . . . . 2  
Claws of leg I with 1 row of teeth or lacking teeth . . . . . 6
- 2(1). Claws of leg IV with 2 rows of teeth . . . . . *N. gressitti*  
Claws of leg IV with 1 row of teeth . . . . . 3

- 3(2). Tibial microspur present . . . . . 4  
 Tibial microspur absent . . . . . 5
- 4(3). Palpal bulb with small longitudinal keel  
 (Fig. 226F-H) . . . . . *N. madang*  
 Palpal bulb with distal flared and transverse  
 keel (Fig. 225G) . . . . . *N. lambleyi*
- 5(3). Tibial spur absent . . . . . *Fijocrypta vitilevu*  
 Tibial spur present, low . . . . . *N. pictipes*
- 6(1). Tibial microspur absent and claws of leg IV  
 without teeth . . . . . *N. mambulu*  
 Tibial microspur present and claws of leg IV  
 with teeth . . . . . 7
- 7(6). Microspur well-developed (Fig.  
 221E) . . . . . *N. gruberi*  
 Microspur vestigial, barely evident  
 . . . . . *N. courti*

Nihoa Raven & Churchill, 1992

*Nihoa* Raven & Churchill, in Churchill & Raven, 1992,  
 p. 23.

#### TYPE SPECIES

*Nihoa mahina* Churchill & Raven, 1992

#### DIAGNOSIS

Distinguished from *Idioctis* by the wider sternum, medially located teeth on the claws of ♀♀ and the lack of a second row of teeth on the claws of ♂♂. The two genera are readily distinguished by the distinct pattern dorsally on the abdomen of *Nihoa*. *Nihoa* also differs from both *Idioctis* and *Idiophthalma* in lacking a rastellum and from *Rhianodes* Raven in having palpal claw tufts in ♀♀ and lacking a groove on the anterior face of the maxillae.

#### DESCRIPTION

Carapace hirsute, without pattern (most species) or strongly ornate (*N. pictipes*). Lateral eye ratio 0.5-2.3. Fovea broad, straight in ♂♂, procurved in ♀♀. Abdomen entirely black, or with distinct pattern or mottling. Rastellum absent (most species) or spinose (*N. kaindi*). Basomesal tooth row of cheliceral furrow confined to basal half. Maxillae with c.3-20 cuspules on inner anterior corner; anterior lobe indistinct, posterior heel produced. Cuspule microstructure: c.40-50µm in maximum diameter; intercrest distance, 0.6-1µm apart; profile, long tapering cones; ridge direction, continuous over smooth crest, like thumbprints; cuspule interspace, 2 or more diameters. Labium wide, with or without cuspules. Sternum as long as wide (*N. bisianumu*) to longer (ca 1.3 times width); sigilla small and

marginal, if evident. Tarsi with basal clavate and filiform trichobothria. FEMALES. Scopula entire on metatarsi and tarsi I-III, in distal half mixed with setae on metatarsi III, and one small triangle proventrally on metatarsi IV, if present, dense and divided by narrow band of setae (most species), but confined to distal 1/3-1/4 of metatarsi I, II and absent on metatarsi III, IV (*N. kaindi*, *N. tatei*). Basifemoral thorns present or absent; thorn spines present (*N. vanuatu*, *N. variata*) or absent (most species). Claws with teeth on medial keel, all similar and higher than tufts. Palp with claw tufts; claw about half the height of tufts. MALES. Tibia I with prolateral spur and megaspine, more distal prolateral megaspine and associated microspur; palpal bulb pyriform; embolic tip flanged. Claws with or without one row of teeth. Intercheliceral tumescence small (*N. lambleyi*) or absent (most species).

#### INCLUDED SPECIES

*Encycrypta annulata* Kulczynski, 1908  
*Idiommatia annulipes* Thorell, 1881  
*Idiommatia aussereri* L. Koch, 1874  
*Nihoa bisianumu* sp. nov.  
*Nihoa courti* sp. nov.  
*Idiommatia crassipes* Rainbow, 1898  
*Nihoa gressitti* sp. nov.  
*Nihoa gruberi* sp. nov.  
*Idioctis hawaiiensis* Raven, 1988  
*Nihoa itakara* sp. nov.  
*Nihoa kaindi* sp. nov.  
*Nihoa karawari* sp. nov.  
*Nihoa lambleyi* sp. nov.  
*Nihoa madang* sp. nov.  
*Nihoa mahina* Churchill & Raven, 1992  
*Encycrypta maior* Kulczynski, 1908  
*Nihoa mambulu* sp. nov.  
*Encycrypta pictipes* Pocock, 1902  
*Nihoa ruleighii* sp. nov.  
*Nihoa tatei* sp. nov.  
*Nihoa vanuatu* sp. nov.  
*Idiommatia variata* Thorell, 1881  
*Nihoa verireti* sp. nov.

#### DISTRIBUTION & HABITAT

From Nihoa and Necker Islands in the northern group of the Leeward Islands, NE Pacific, in terrestrial habitats to the NW Pacific islands including Vanuatu, New Guinea, New Britain and Pelew Island. The gender is feminine.

***Nihoa annulata* (Kulczynski, 1908)**  
 (Figs 209, 213, Table 18)

*Encycrypta annulata* Kulczynski, 1908, p. 441;  
 Kulczynski, 1911, p. 423; Roewer, 1942, p. 214;  
 Bonnet, 1957, p. 2287.

	<i>aussereri</i>	<i>bislanomai</i>	<i>courti</i>	<i>gressitti</i>	<i>gruberti</i>	<i>kainui</i>	<i>lambleyi</i>	<i>maior</i>	<i>manubula</i>	<i>rakeigila</i>	<i>tatei</i>	<i>vanuatu</i>	<i>variata</i>
Size of PMS	large	large	large	large	large	large	large	v. large	large	absent	large	large	large
No. maxillary cuspules	6-9	7	3	7-9	2-3	5	15	17	3	23	5	6	9
Dorsal abdomen, pattern	black	mottled	mottled	mottled	mottled	pale mottled	fishbone	black	d. mottled	d. mottled	d. mottled	d. mottled	mottled
♂ Tibial spur position	?	?	distal	distal	subdistal	?	distal	?	subdistal	distal	?	?	?
Tibial megaspine	?	?	short	long	short	?	>short	?	short	><short	?	?	?
Spur size	?	?	large	low	low	?	low, wide	?	small cone	very low	?	?	?
Upper megaspine	?	?	short	long	long	?	long	?	short	absent	?	?	?
Tibial microspur	?	?	triangular	short	triangular	?	small	?	absent	absent	?	?	?
Palpal bulb	?	?	simple	simple	simple	?	simple	?	simple	simple	?	?	?
Keels on bulb	?	?	1 low	1 low	1 long	?	large serrated	?	1 long	1 long screw	?	?	?
Embolus origin	?	?	gradual	gradual	gradual	?	distal	?	distal	distal	?	?	?
Tooth rows on leg I	?	?	1(1)	2(2)	1(1)	?	2(1)	?	1(0)	2(1)	?	?	?
♀ Spermathecal lobes	1 + 1	1 + 1	1 + 1	1 + 1	?	1 + 1	?	1 + 1	?	?	1 + 1	2 + 2	1 + 1
Spermathecae shape	ant. domes	ant. domes	ant. domes	ant. domes	?	ant. domes	?	ant. domes	?	?	ant. domes	4 sep. lobes	ant. domes
Rastellum	absent	absent	absent	absent	absent	spunose	absent	absent	absent	absent	weak	absent	absent
Patellar thorns, III(IV)	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	absent	present	present
Basifemoral thorns	I, II, IV	I, IV	absent	I-IV	?	absent	absent	><absent	?	?	absent	absent	absent
Labial cuspules	absent	absent	absent	absent	absent	absent	absent	2	absent	absent	absent	absent	1
Scopula metatarsi, III(IV)	1/3(1/5)	1/3(1/6)	1/4(1/6)	absent	1/4(0)	absent	1/3(1/4)	1/3(1/6)	1/4(0)	absent	absent	absent	1/2(1/4)
Preening comb, III(IV)	absent	present	absent	pro & retro	absent	present	absent	><present	><present	present	absent	pro & retro	present
Autapomorphy			♀ legs I-III tarsi > meta-				♀ ti I > me > pa: ♂ int. chel. turn	y large PMS		No PMS			tarsi IV cracked
Distribution	Few I, NW Pacific	Port Moresby area	N Solomons Prov.	SE Wau	New Britain	SE Wau	Near Port Moresby	Sattelburg, N coastal	Solomon Is	Southern PNG	Mt Dayman	Vanuatu	Yule I

Table 17. *Nihon* species of the western Pacific without banded legs. Localities are in Papua New Guinea unless otherwise stated.

	<i>annulata</i>	<i>annulipes</i>	<i>itakara</i>	<i>karawari</i>	<i>madang</i>	<i>pictipes</i>	<i>verreiti</i>
Size of PMS	large	large	large	large	normal	normal	normal
No. maxillary cuspules	15-20	22	13-14	11	11	15-17	13
Dorsal abdomen, pattern	mottled	dark	mottled	mottled	mottled	ornate	mottled
♂ Tibial spur position	?	?	?	?	distal	distal	?
Tibial megaspine	?	?	?	?	long	v. short	?
Spur size	?	?	?	?	long slender	small low	?
Upper megaspine	?	?	?	?	straight	absent	?
Tibial microspur	?	?	?	?	thumb-like	absent	?
Palpal bulb	?	?	?	?	simple	simple	?
Keels on bulb	?	?	?	?	1 long	1 long	?
Embolus origin	?	?	?	?	distal	distal	?
Tooth rows : legs I(IV)	?	?	?	?	2(1)	2(1)	?
♀ Spermathecal lobes	2+2	2+2	1+1	1+1	?	2+2	2+2
Spermathecae shape	1 lge & 1 small/side	1 lge & 1 small/side	ant. domes	ant. domes	?	1 lge & 1 small/side	1 lge & 1 small/side
Rastellum	absent	absent	absent	absent	absent	absent	absent
Patellar thorns III(IV)	absent	absent	absent	absent	absent	absent	absent
Basifemoral thorns	W: I, II, IV	absent	I, II, IV	I, II, IV	?	absent	absent
Scopula metatarsi III(IV)	1/2(1/4)	1/3(1/5)	1/5(0)	1/3(1/8)	1/5(0)	absent	1/2(1/4)
Preening combs III(IV)	present	v. weak	present	absent	><absent	present	absent
Distribution	Simbang, N coastal	Yule I	Oro Province	East Sepik Province	Madang	New Britain	Port Moresby area

Table 18. *Nihoa* species with banded legs. Localities are in Papua New Guinea unless otherwise stated.

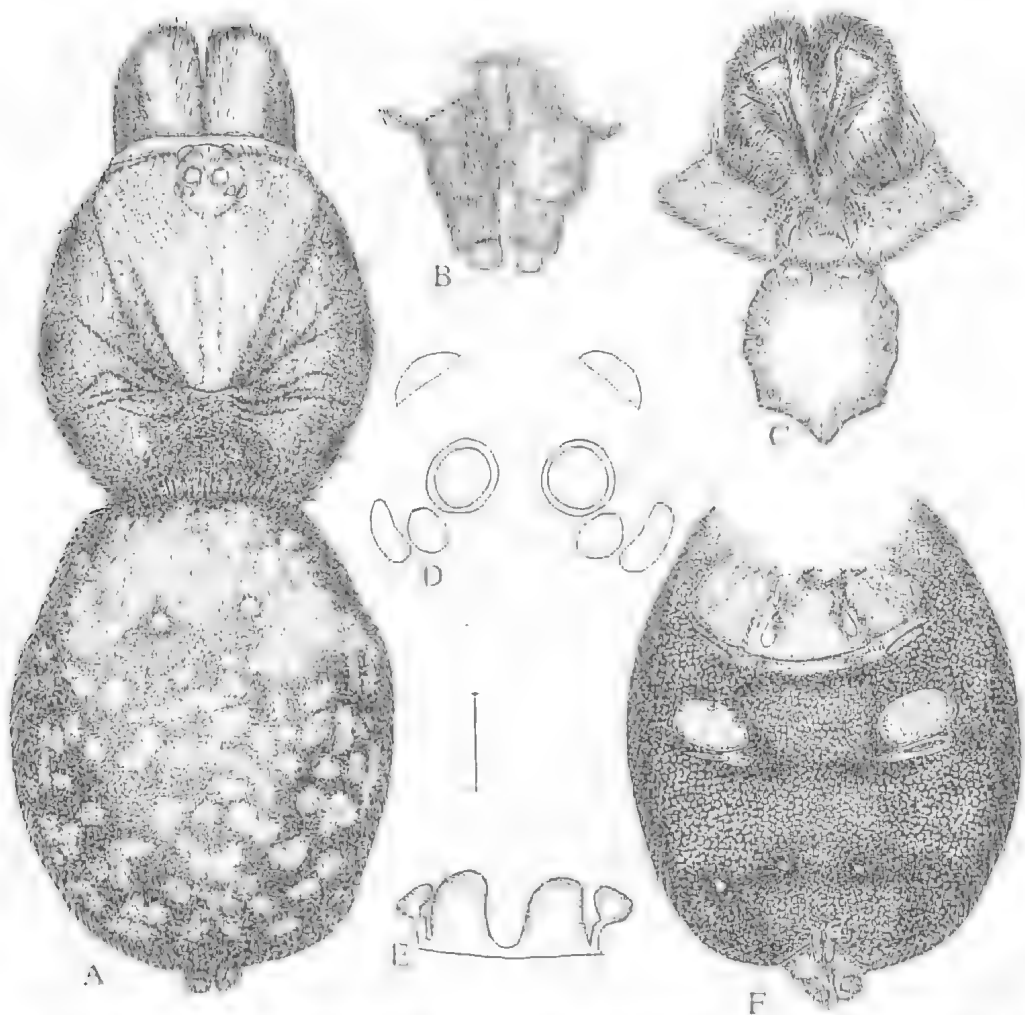


FIG. 213. *Nihoa annulata* (Kulczyński), lectotype ♀ (NHMH). A, carapace, chelicerae & abdomen, dorsal view; B, spinnerets, ventral view; C, sternum, maxillae, labium & chelicerae, ventral view; D, eyes, dorsal view; E, spermallae; F, abdomen, ventral view. Scale line = 2mm (A, C, F); 1mm (B); 0.5mm (D, E).

#### MATERIAL EXAMINED

**TYPES.** Lectotype ♀, **NEW DESIGNATION**, Friedrich-WilhelmsHafen, New Guinea, 1897, L. Biró, NMNH; ♂, paralectotype, not located, Sumbang, [6°35'S 147°50'E], July 1898, L. Biró; paralectotype, ♀, New Guinea (NE), 'Sattelburg', [6°29'S 147°46'E], Apr 1899, L. Biró; not located.

#### DIAGNOSIS

*N. annulata*, *N. major* and *N. annulipes* differ from other *Nihoa* in that the PMS are quite large, being 0.70 or more as long as the basal segment of the posterior lateral spinnerets. *N. annulata* differs from *N. major* in the legs having darker annulations, the abdomen has pattern dorsally,

patellae I, II, and IV are shorter than tibiae of the same legs, and the sternal margins are setose. *N. annulata* differs from *N. annulipes* in lacking a rastellum, the scopula on metatarsus III extends for half (rather than one-third) the length, and patella III is longer than tibia III. Differs from *N. pictipes* in that the abdomen is ventrally brown and without pattern and eye group is clearly wider behind than in front rather than subequal. Differs from *N. mudang* in having abdomen ventrally brown without light markings.

Large, carapace length c.8. Legs annulated; abdomen dorsally mottled, ventrally entirely brown. PMS well developed, width c.0.3 of that



of posterior laterals and length c.0.8 of length. Rastellum absent. FEMALE. Metatarsi III scopulate for distal half. Eye group wide, lateral eye ratio c.0.8. Preening combs present. Basifemoral thorns few, weak on I, II, IV. Spermathecae on each side a pair of lobes; outer lobe sinuous, c.0.2 width of inner lobe of similar length. MALES. Unknown.

#### DESCRIPTION

##### LECTOTYPE FEMALE NMNHB

Carapace 8.17 long, 7.25 wide. Abdomen 10.42 long, 8.33 wide. Total length, 21.

**Colour.** Carapace, chelicerae, and legs red brown; abdomen dorsally dark brown with uniform small mottling, ventrally brown without pattern; legs with dark brown bands on distal and prolateral tibiae and metatarsi.

**Carapace.** Bristles: uniform cover of silver hairs and fine black; 20-30 behind eye group; 8-10 anteromedian 6-8 between ALE and between PME; group of 3-6 thicker beside posterior striae. Fovea moderately broad, procurved.

**Eyes.** Group occupies 0.33 of head-width; front width, back width, length, 64:79:58; tubercle raised distinct. AME:ALE:PME:PLE, 20:21:12:17. MOQ front width, back width, length, 49:51:30. Back row procurved. Eye interspaces: AME-AME, 0.6; AME-ALE, 0.9; ALE-ALE, 1.6; ALE-PLE, 1.3; PME-PLE, 0.1; PME-PME, 1.7.

**Chelicerae.** Uniform cover of moderately long black bristles and short fine setae. Rastellum absent. Promargin with 1 small and 9 large teeth; basomesally with 10-15 granules.

**Labium.** 1.25 wide, 0.66 long; with 2 small cuspules; separated from sternum by two large sigilla joined medially. Setation, many long thick setae on anterior edge, 2 setae centrally, 5 fine setae just behind centre point.

**Maxillae.** 2.33 long in front, 2.91 long behind, 1.58 wide; with 15-20 cuspules on low mound in inner angle; heel broad, slightly produced; anterior lobe broad, indistinct. Lyra and anterior groove absent.

**Sternum.** 4.00 long, 3.33 wide; margins setose. All sigilla small (ca 10% of sternal width), oval, touching margin.

	I	II	III	IV	Palp
Femur	5.25	4.92	4.33	5.83	4.25
Patella	3.33	3.00	3.08	3.33	2.75
Tibia	3.42	3.25	2.75	4.67	2.75
Metatarsus	2.75	2.67	3.17	5.33	-
Tarsus	1.75	1.50	1.25	1.67	1.92
Total	16.50	15.34	14.58	20.83	11.67

**Legs.** I, II slightly thicker than III, IV. Basifemoral thorns few, weak on I, II, IV. Thorn spines absent. Preening combs: III, 1 of 2 teeth; IV, 1 of 3 thick setae, all retroventral.

**Scopula.** Extends for c.180° around base of tarsi I. Metatarsi and tarsi I, II, full, entire. Metatarsi III, in distal 1/2, divided, thin; IV, in 2 groups of c.20 hairs. Tarsi: III, 15-20 setae interspersed, not in band; IV, divided by 5-6 lines of setae.

**Spines.** I: fe p1, pa 0, ti v3, me 0. II: fe p1, pa 0, ti p2, v2, me 0. III: fe p2, d3, r2, pa p2, r2, ti p2, r2, v7, me p3, r2, v7. IV: fe d3, r1, pa 0, ti r4, v9, me p3, r3, v9. Palp: fe p1, pa 0, ti p1, v8.

**Trichobothria.** Tibia with c.8-10 for its length; metatarsi with 15-20 in long gently curving row; tarsi with 15-20 filiform in two bands separated by setae, and 2-4 clavate basally.

**Claws.** 1-3 small teeth on outer faces (1) or 1 tooth (IV); palpal claw c.half size of tufts, bare. Paired claws all large, project above tufts. Tufts triangular in dorsal and axial view.

**Spinnerets.** PMS 0.81 long, 0.23 wide, 0.06 apart, and c.0.33 of basal PLS in diameter. Basal, middle, apical, and total articles of PLS 1.04, 0.48, 0.33, 1.85 long, respectively.

**Spermathecae.** On each side a pair of lobes; outer lobe sinuous, c.0.2 width of inner lobe of similar length and with large apical expansion.

#### DISTRIBUTION

Friedrich-WilhelmsHafen, Sattelburg and Simbang, all in NE PNG.

#### REMARKS

Kulczynski (1908, p. 428) listed 3 specimen 'lots': a ♀ and juveniles from Sattelberg, a ♂ from Simbang, and juveniles from Friedrich-WilhelmsHafen. Material from the National Museum of Hungary includes only one vial with one juvenile, one subadult, and one ♀ labelled 'N. Guinea: Friedrich-WilhelmsHafen, 1897, leg. L. Biro, J.Z.P.A.N. Warsawo 46/51.u'. Hence, the ♂ is lost and the only adult ♀ has been designated lectotype, and all other specimens are paralectotypes.

#### *Nihoa annulipes* (Thorell, 1881) (Figs 209, 214, Table 18)

*Idiammata annulipes* Thorell, 1881, p. 248; Roewer, 1942, p. 214; Bonnet, 1957, p. 2287, comb. nov.

#### MATERIAL EXAMINED

TYPE, Holotype ♀, Yule Is, 8°50'S 146°30'E, southern PNG, Roro, 1875, L.M. D'Albertis, CMG.

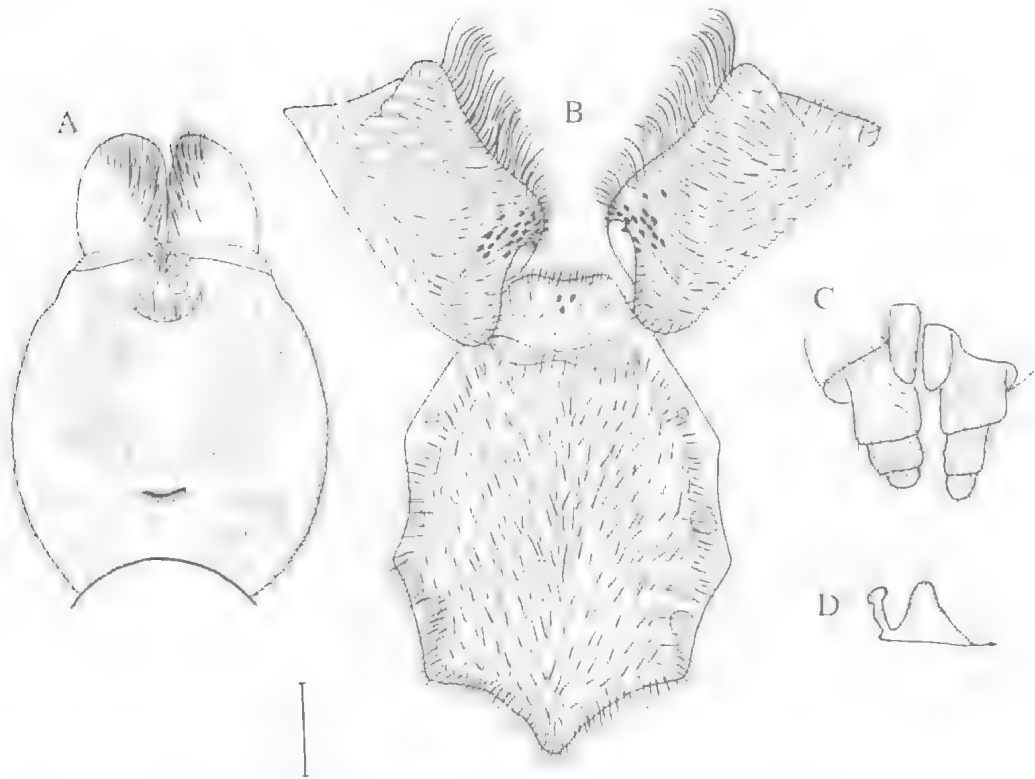


FIG. 214. *Nihoa annulipes* (Thorell), holotype ♀ (CMG). A, carapace & chelicerae, dorsal view; B, sternum, maxillae & labium, ventral view; C, spinnerets, ventral view; D, spermathecae. Scale line = 2mm (A); 1mm (B, C); 0.5mm (D).

#### DIAGNOSIS

*N. annulipes*, *N. maior* and *N. annulata* differ from other *Nihoa* in that the PMS are quite large, being 0.70 or more as long as the basal segment of the posterior lateral spinnerets. *N. annulipes* differs from *N. maior* in the legs having darker annulations and the abdomen having pattern, and also in that all leg patellae are shorter than tibiae of the same legs. Females of *N. annulipes* differ from those of *N. annulata* in having a rastellum, the scopula on metatarsus III extends for only one-third (rather than half) the length, and patella III is shorter than tibia III. Differs from *N. variata* with which it is sympatric in the more many maxillary cuspules (22 vs 9) and in the relatively larger PMS, about as long as, and half the diameter of the basal article of the PLS. Differs from *Moruga fuliginea* in the weaker rastellum and from *N. pictipes* in the weaker metatarsal scopulae and stronger rastellum.

PMS well developed. Maxillae with c.22 cuspules; labium with cuspules. Abdomen dark brown, without pattern; legs distinctly annulated.

Rastellum with 20-30 long blunt bristles distally. **FEMALES.** Basifemoral thorns and preening combs absent. Fang with double tooth near ventral outer junction. Spermathecae each a pair of lobes with separate outlets, outer lobe slender apically spheroidal. **MALES.** Unknown.

#### DESCRIPTION

##### HOLOTYPE FEMALE CMG

Carapace 7.58 long, 6.83 wide. Abdomen 9.30 long, 6.00 wide. Total length, 18.

**Colour.** Carapace and chelicerae red brown, legs red brown with brown bands on distal and proximal metatarsi and tibiae. Abdomen dorsally dark brown, no pattern discernible although may have been, ventrally cream with few small brown markings.

**Carapace.** Lightly hirsute, light cover of short brown bristles. Fine short hairs on lateral margins, 4 thick bristles in front of AME, 5-6 thick between ALE, 2 fine paired foveal bristles; few fine anteromedially. Striae glabrous. Fovea moderately short, slightly procurved.

**Eyes.** Group occupies 0.33 of head-width; front width, back width, length, 57:80:61. Back row more or less straight. MOQ front width, back width, length, 51:58:35. AME:ALE:PME:PLE, 23:19:10:19. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.6; ALE-ALE, 1.1; PME-PLE, 0.1; PME-PME, 1.9; ALE-PLE, 1.4.

**Chelicerae.** Stout, with moderately long brown bristles. Rastellum with many (20-30) long blunt bristles distally. Fang with double tooth near ventral outer junction. Furrow promargin with 5 large and 6 smaller teeth, basomesally with 5 small teeth and distal group of 30 granules.

**Labium.** 2.04 wide, 0.76 long; with 4 cuspules. Labiosternal suture not reaching sternal edges.

**Maxillae.** 2.33 long in front, 3.33 long behind, 1.63 wide; with c.22 blunt cuspules in inner corner; as long as coxae I. Heel produced, inner concave; anterior lobe distinct, broad, rounded.

**Sternum.** 4.50 long, 3.67 wide. Pilosity, no bristles but hairs on margin in front of coxae III. Sigilla all oval, marginal.

**Legs.** Inner ventral edges of coxae with slight edge. Preening combs absent on metatarsi I-III but short spines grouped closely on metatarsi IV.

	I	II	III	IV	Palp
Femur	4.50	4.00	3.50	4.67	3.33
Patella	3.17	3.00	2.67	1.83	2.33
Tibia	3.50	3.33	2.83	5.17	2.33
Metatarsus	2.67	2.67	3.00	4.33	-
Tarsus	1.50	1.67	1.50	2.83	2.33
Total	15.34	14.67	13.50	18.83	10.32

**Scopula.** Metatarsi: I, II, full, entire; III, distal 1/3 thin, divided by scattered setae; IV, distal 1/5 thin, divided by scattered setae. Tarsi: I, II, entire; III, entire but distal, few setae dividing; IV, divided, narrow.

**Spines.** I, fe p1, pa 0, ti 0, me 0; II, fe p1, pa 0, ti p2, me v1; III, fe p1, r1, pa p2, r1, ti p2, r2, v6, me p3, r2, v10; IV, fe 0, pa 0, ti r2, v9, me p1, r2, v7; palp, fe p1, pa 0, ti p1, v3.

**Claws.** One short thick and one smaller tooth on leg I. Claw tufts do not enclose claw, divided. Palpal claw bare.

**Trichobothria.** Two rows, each of c.10 for 2/3 of tibiae; one curved row of c.18 on metatarsi; c.25 in broad band on tarsi.

**Spermathecae.** Each a pair of lobes with separate outlets, outer lobe slender apically spheroidal.

**Spinnerets.** PMS 0.76 long, 0.33 wide, 0.04 apart, c.0.44 of basal PLS in diameter. Basal, middle, apical, and total articles of PLS, 0.82, 0.50, 0.29, 1.61, long respectively.

#### DISTRIBUTION

Yule Island, Torres Strait.

#### *Nihoia aussereri* (L. Koch, 1874)

(Figs 71, 215, Table 17)

*Idionunata aussereri* L. Koch, 1874, p. 477, T XXXVI, fig. 6, 6a; Ausserer, 1975, p. 164; Roewer, 1942, p. 214; Bonnet, 1957, p. 2287.

*Encyocrypta aussereri* (L. Koch); Hogg, 1901, p. 240.

#### MATERIAL EXAMINED

TYPE. Holotype ♀, 'Pelew Island' [=Palau Island, 7°30'N 134°30'E], NW Pacific Ocean. A. Teten's, in ZMH, examined.

#### DIAGNOSIS

Differs from *N. gressitti* in the longer eye group, scopula on metatarsi III and lack of preening combs, and, and from *N. pictipes* in the lack of leg bands and abdominal pattern.

PMS distinct. 6-9 cuspules on maxillae. Rastellum absent. Abdomen dark brown, without pattern; legs not banded. FEMALES. Spermathecae are paired antennate domes. Scopula on metatarsi III, IV. Preening combs absent. Basifemoral thorns on I, II, IV. MALES. Unknown.

#### DESCRIPTION

##### HOLOTYPE FEMALE ZMH

Carapace 9.00 long, 7.83 wide. Abdomen 9.83 long, 6.83 wide. Total length, 22.

**Colour.** Carapace, legs and chelicerae red brown; hirsute pigmented areas in front of ALE. Abdomen entirely dark brown and without pattern.

**Carapace.** Uniform cover of short brown bristles and fine hairs in narrow bands on interstitial ridges. 6-8 thick bristles on clypeus edge and between ALE. Slight depression behind ALE. Caput arched. Fovea procurved.

**Eyes.** Group occupies 0.32 of head-width; front width, back width, length, 66:88:58. Back row recurved. MOQ front width, back width, length, 54:59:37. Ratio of AME:ALE:PME:PLE, 23:19:12:18. Eye interspaces: AME-AME, 0.2; AME-ALE, 0.6; ALE-ALE, 1.2; ALE-PLE, 1.7; PME-PLE, 0.1; PME-PME, 1.7.

**Chelicerae.** Bristles: short, fine on interfaces; long brown prodorsally; finer laterally and uniform. Rastellum absent but many short slender bristles on low mound. Promargin of furrow with 10 thick and small teeth, basomesally with about 10 fine granules.

**Labium.** 1.72 wide, 0.72 long. Edges slightly obscured by maxillae.

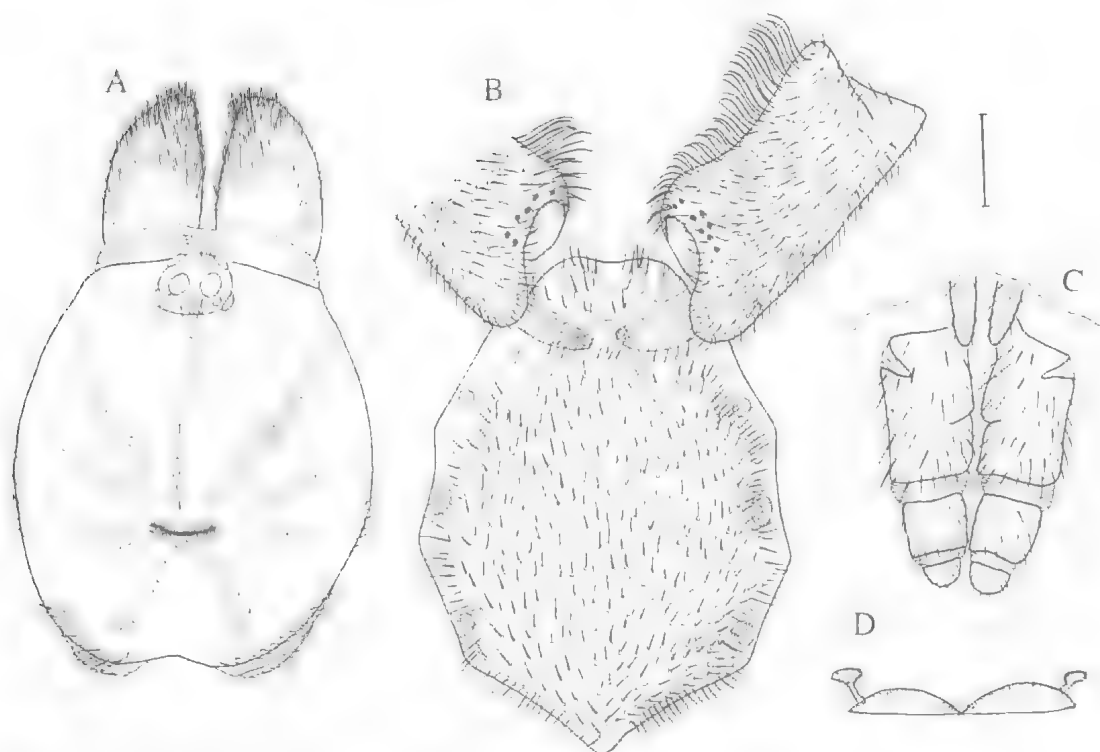


FIG. 215. *Nihoa aussereri* (Koch), holotype ♀ (ZMH). A, carapace & chelicerae, dorsal view; B, sternum, maxillae & labium, ventral view; C, spinnerets, ventral view; D, spermathecae. Scale line = 2mm (A); 1mm (B-D).

**Maxillae.** 2.48 long in front, 3.36 long behind, 1.40 wide. 6-9 cuspules in irregular line on inner angle. Anterior lobe and posterior heel produced. Inner edge concave. Lyra absent.

**Sternum.** 4.40 long, 3.76 wide. Sigilla shape, length and distance from margin of posterior, oval, 0.24; middle, oval, 0.32; anterior, oval, 0.16.

**Legs.** Basifemoral thorns: 10-15 on I, II, fewer on IV. Preening combs absent.

**Scopula.** Full, entire on metatarsi and tarsi I, II; divided by setae on tarsi III (line) and IV (band) and distal one-third of metatarsi III; in two small distal lateral groups on metatarsi IV.

	I	II	III	IV	Palp
Femur	4.33	4.00	3.83	5.50	3.67
Patella	3.50	3.17	2.83	3.33	2.67
Tibia	2.50	2.50	2.67	4.50	2.50
Metatarsus	2.50	2.50	2.67	5.17	-
Tarsus	1.83	1.50	1.33	1.83	2.50
Total	15.49	14.17	13.49	20.33	11.34

**Spines.** Generally weak. I: fe p1; pa 0; ti v2; me 0. II: fe p1; pa 0; ti 0; me 0. III: fe p1, r2; pa p2; ti p2, r2, v6; me p2, r2, v4. IV: fe r1; pa 0; ti r3, v5; me p1, r2, v8. Palp: fe p1; pa 0; ti p1, v4.

**Claws.** Project through tufts; on leg I with 2 small teeth-distal tooth longer; on leg IV with 1 small tooth. Palpal claw bare.

**Trichobothria.** c.9 for 1/2 length of tibiae; c.16 in curving row on metatarsi; two bands, each of 10-12, divided by short setae on broad tarsi.

**Spinnerets.** PMS 0.76 long, 0.28 wide, 0.24 apart, 0.25 of basal PLS in diameter. Basal, middle, apical and total articles of PLS, 1.48, 0.52, 0.24, 2.24 long, respectively.

**Spermathecae.** Two short lobes with distal expansions ectal to two low mounds, paired antennate domes.

#### DISTRIBUTION

Palau Island, NW of PNG.

***Nihoa bisianumu* sp. nov.**  
(Figs 209, 216. Table 17)

#### MATERIAL EXAMINED

**TYPES.** Holotype ♀, Bisianumu Falls, DPI Stn, Central Province, PNG, 9°25'S, 147°25'E, 23 Mar 1986, D. Court, QMS11234; 3 paratype ♀♀, same data, QMS8287.

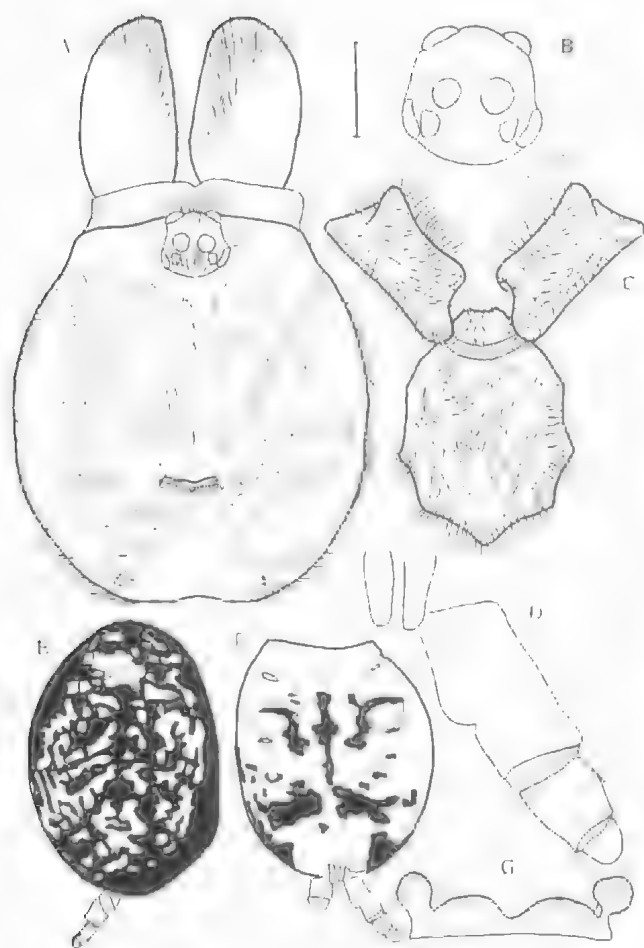


FIG. 216. *Nihoa bisianumu* sp. nov., holotype ♀ (QMS11234). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, sternum, maxillae & labium, ventral view; D, spinnerets, ventral view; E, F, abdomen, dorsal (E), ventral view (F); G, spermathecae. Scale line = 4mm (E, F); 2mm (A, C); 1mm (B); 0.5mm (D, G).

#### DIAGNOSIS

Females differ from those of *N. variata* in longer eye group and the few basifemoral thorns and from *N. vanuatu* in scopula, from *N. gressitti* in having scopula on metatarsi III.

PMS well developed. Maxillae with c.7 cuspules; labium without cuspules. Abdomen mottled; legs not banded. Rastellum absent. FEMALES. Basifemoral thorns on I, IV; preening combs present. Scopula on metatarsi III, IV. Spermathecae two low broad lobes medially and two stout wide-necked outer lobes, all discharging into common atrium. MALES. Unknown.

#### DESCRIPTION

##### HOLOTYPE FEMALE QMS11234

Carapace 8.44 long, 7.81 wide. Abdomen 11.30 long, 8.91 wide. Total length, 22.

**Colour.** Carapace, chelicerae, and legs orange brown without darker marks or bands. Abdomen dorsally brown with many large pallid areas forming irregular brown band medially; ventrally pallid with narrow brown areas centrally, behind posterior booklungs, and in front of spinnerets.

**Carapace.** Pilosity: uniform light cover of fine brown hairs forming few narrow bands on interstrial ridges; striae, save anterior pair, indistinct, narrow. Bristles: few fine slightly thicker erect black beside posterior striae; 5 long anteromedially and many in band beside caput; c.4 long thick and many finer between PME, and c.8 long thick and few finer between ALE; light bush of short hairs and few bristles on lateral margins. Fovea short, procurved.

**Eyes.** Tubercle low, distinct. Group occupies 0.23 of head-width. Group occupies 0.32 of head-width; front width, back width, length, 48, 59, 50, respectively. MOQ front width, back width, length, 34, 42, 25, respectively. AME:ALE:PME:PLE, 12:17:9:17. Eye interspaces: AME-AME, 0.7; AME-ALE, 2.2; ALE-PLE, 1.6; PME-PME, 2.2; PME-PLE, 0.9; ALE-ALE, 1.2. Back row straight.

**Chelicerae.** Few long thick and many finer bristles prodorsally, laterally setose. Rastellum absent but dense cluster of short strong curved bristles. Furrow promargin with 4 small tightly mixed with 12 large teeth, basomesally with 5 small teeth and 20 granules in basal third.

**Labium.** 0.75 long, 1.13 wide. Bristles: 5 long thick in line behind front group, 3 thick behind that, several thinner but long bristles along posterior shelf. Labiosternal suture a broad deep groove.

**Maxillae.** 2.44 long in front, 3.38 long behind, 1.50 wide with 7 blunt cuspules in inner angle, not on mound. Heel produced; anterior lobe broad, indistinct.

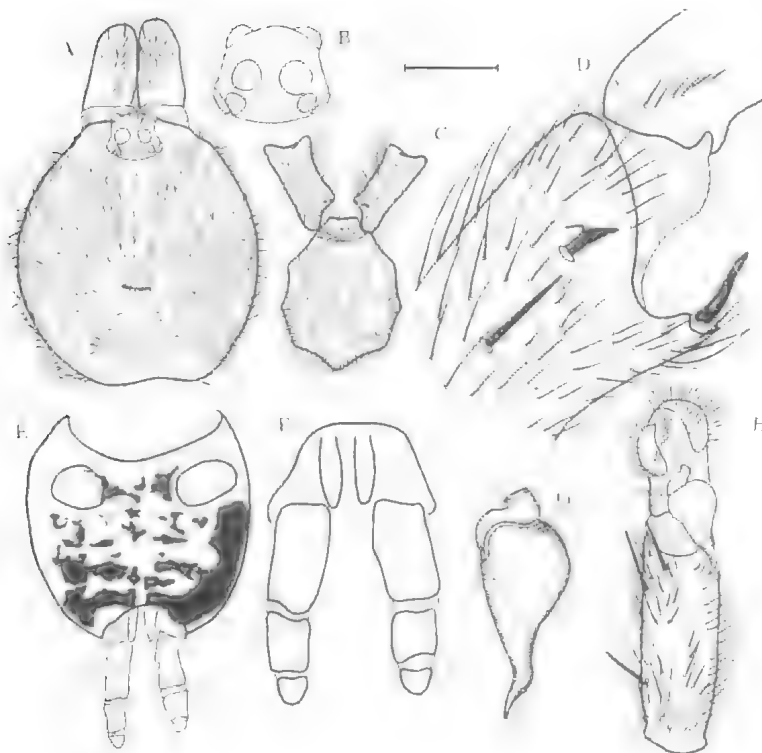


FIG. 217. *Nihoa courti* sp. nov., holotype ♂ (QMS8275). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, sternum, maxillae & labium, ventral view; D, tibia I, spur & metatarsus I, prolateral view; E, abdomen, ventral view; F, spinnerets, ventral view; G-H, palpal tibia, cymbium (H) & bulb (G, H), ventral view. Scale line = 1mm (B, F, H); 2mm (A, C, E); 0.5mm (D, G).

**Sternum.** 3.94 long, 3.94 wide. Sigilla: posterior pair clearly larger, oval, marginal; other smaller, subcircular, marginal.

**Legs.** 5 basifemoral thorns on I, 2 long on IV. Thorn spines absent. Preening combs: 1 of 2-3 setae on retrolateral III, IV. All tarsi incrassate.

	I	II	III	IV	Palp
Femur	5.15	4.61	4.97	6.97	3.82
Patella	3.94	3.64	3.09	3.76	2.85
Tibia	3.88	3.58	3.03	4.97	2.67
Metatarsus	2.85	2.79	3.33	5.88	-
Tarsus	2.55	2.48	2.36	2.73	3.45
Total	18.37	17.10	16.78	24.31	12.79

**Scopula.** Metatarsi: I, II, full, dense, entire; III, in distal 1/2, divided by setal band; IV, in 2 triangles in distal 1/6. Tarsi: I, II, full, dense, entire; III, divided by narrow setal band 1-3 wide; IV, divided by narrow setal band 4-6 wide with 6-8 longer setae along or off margins of band.

**Spines.** I, fe p1, pa 0, ti v1w, me v1w; II, fe p1, pa 0, ti p1, v3w, me v1w; III, fe p2, r2, pa p2, r1,

ti p2, r2, v9, me p3, r1, v5; IV, fe r1, pa r1, ti p1, r2, v10, me p3, r3, v10; palp, fe p1, pa 0, ti p1, v6.

**Claws.** 1 (IV)-2 (I, one small) teeth medially; palpal claw about half size of tufts and of paired claws, bare.

**Trichobothria.** Two rows, each of c.10 for 2/3 of tibiae; c.15 on metatarsi in short curving row, forming band distally; c.6-8 clavate and c.16 filiform on tarsi.

**Spermathecae.** Two low broad lobes medially and two stout wide-necked outer lobes, all discharging into common atrium.

**Spinnerets.** PMS 0.84 long, 0.34 wide, 0.22 apart, and c.0.25 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.98, 0.70, 0.31, 2.99 long, respectively.

#### DISTRIBUTION

Bisianumu Falls, DPI Stn, Central Province, PNG.

#### *Nihoa courti* sp. nov. (Figs 71, 217, 218. Table 17)

#### MATERIAL EXAMINED

**TYPES.** Holotype ♂, Waterfall area, 6km N of Itakara, 6°13'S 155°29'E, North Solomons Province, 30 Sep 1986, D.J. Court, QMS8275; allotype ♀, same data but QMS19430.

#### DIAGNOSIS

Females differ from those of *N. itakara* by having unbanded legs, lacking basifemoral thorns, and in the form of the spermathecae, and from *Fijocrypta vitilevu* in having scopula on metatarsi III. Males differ from those of *N. gruberi* in the vestigial microspur.

PMS well developed. Maxillae with c.3 cuspules; labium without cuspules. Abdomen mottled; legs not banded. Rastellum absent.

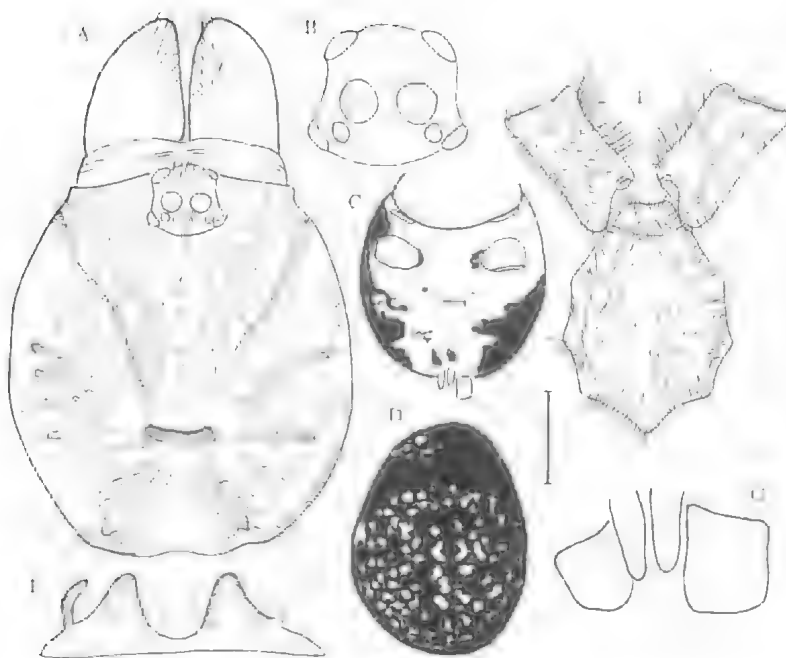


FIG. 218. *Nihoa courti* sp. nov., allotype ♀ (QMS19430). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, D, abdomen, dorsal (D), ventral view (C); E, sternum, maxillae & labium, ventral view; F, spermathecae; G, spinnerets, ventral view, apical segments of PLS hidden. Scale line = 1mm (B, G); 2mm (A, E); 4mm (C, D); 0.5mm (F).

**FEMALES.** Basifemoral thorns and preening combs absent. Scopula on metatarsi III, IV. Spermathecae two, each a triangular lobe with small slender outer lobe. **MALES.** Tibia I with small, elegant conical spur with thick bent megaspine apically; microspur a nominal mound set against slightly curved megaspine c.4 times longer than basal width. Chelicerae with teeth basomesally. Bulb long pyriform with gradual embolic origin; long low almost straight keel arises in distal third and extends to embolus tip. Legs I, IV with one row of 4-5 short teeth medially on claws.

#### ETYMOLOGY

For Mr David Court.

#### DESCRIPTION

##### HOLOTYPE MALE QMS8275

Carapace 5.78 long, 5.31 wide. Abdomen 6.25 long, 4.53 wide. Total length, 13.

**Colour.** Carapace brown, chelicerae, and legs orange brown without darker markings. Abdomen dorsally brown with fine white mottling; ventrally pallid with several irregular transverse brown bands.

**Carapace.** Pilosity light uniform pile of fine black and silvery brown hairs; striae indistinct, narrow. Bristles: c.5 erect black beside posterior striae; c.7 long anteromedially and c.15 in band beside caput; 1 long thick and many finer between PME, and c.7 long thick and few finer between ALE; few hairs and single line of strong curved brown bristles on lateral margins. Fovea short, almost straight.

**Eyes.** Tubercle distinct. Group occupies 0.40 of head-width; front width, back width, length, 37, 41, 37, respectively. MOQ front width, back width, length, 35, 39, 23, respectively. AME:ALE:PME:PLE, 15:14:8:12. Eye inter-

spaces: AME-AME, 0.5; AME-ALE, 1.4; ALE-PLE, 1.2; PME-PME, 1.3; PME-PLE, 0.5; ALE-ALE, 1.1. Back row straight.

**Chelicerae.** Many long black bristles prodorsally, laterally very setose. Rastellum absent. Intercheliceral tumescence absent. Furrow promargin with 5 large mixed with 5 smaller teeth, basomesally with cluster of 10-12 granules in distal part of basal third.

**Labium.** 0.42 long, 0.79 wide. 5 setae in distinct line behind front group, a line of 6 line and band of several long but fine along posterior shelf. Labiosternal suture two sigilla touching centrally.

**Maxillae.** 1.58 long in front, 2.06 long behind, 0.79 wide with 2-3 blunt cuspules in inner angle. Heel produced; anterior lobe indistinct.

**Sternum.** 2.85 long, 2.55 wide. Sigilla all small, oval, marginal.

**Legs.** Tibia I with small, elegant conical spur with thick bent megaspine apically; microspur a nominal mound set against slightly curved megaspine c.4 times longer than basal width. Basifemoral thorns absent. Thorn spines and



preening combs absent. Scopulate areas of metatarsi and tarsi I, II, and tarsi III, IV pallid, not incrassate.

	I	II	III	IV	Palp
Femur	4.73	4.55	3.70	5.39	2.79
Patella	3.03	2.79	2.12	2.61	1.76
Tibia	3.94	3.33	3.21	4.67	2.18
Metatarsus	3.09	3.21	3.58	5.03	-
Tarsus	2.67	2.67	2.36	3.45	1.21
Total	17.46	16.55	14.97	21.15	7.94

*Scopula*. Metatarsi: I, II, distal 5/6, dense, entire; III, two sparse triangles in distal 1/4; IV, two thin triangles in distal 1/6. Tarsi: I, II, full, dense, entire; III, entire, save for few setae on midline, not divided; IV, divided by narrow setal band 2-4 wide.

*Spines*. I, fe p2, d4, pa 0, ti p1 + megaspine, v5 + megaspine, me v1; II, fe p3, d4, r4, pa 0, ti p1, v5, me v1; III, fe p3, d4, r3, pa p2, ti p2, r2, v5, me p2, r2, v6; IV, fe d3, r1, pa 0, ti p3, r3, v10, me p2, r3, v8; palp, fe p1, pa 0, ti p1, v4.

*Claws*. 4-5 short teeth medially on claws; all claws of similar size and rise above tufts.

*Trichobothria*. Two rows, each of c.7 for 2/3 of tibiae; c.12 on metatarsi in short curving row distally irregular; c.3 small clavate and c.12 filiform on tarsi.

*Palp*. Bulb long pyriform with gradual embolic origin; long low almost straight keel arises in distal third and extends to embolus tip; retrolateral face of cymbium concave; cymbium slightly dimorphic.

*Spinnerets*. PMS 0.77 long, 0.19 wide, 0.19 apart, and c.0.33 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.13, 0.55, 0.22, 1.90 long, respectively.

#### ALLOTYPE FEMALE QMS19430

Carapace 8.59 long, 7.34 wide. Abdomen 10.90 long, 8.28 wide. Total length, 21.

*Colour*. Carapace dark red brown with darker markings along posterior corners, chelicerae dark red brown, legs orange with slightly darker marks basally and distally on femora, laterally on patellae, proximally on tibiae I-IV, distally on tibiae III, IV, and centrally on metatarsi III, IV. Abdomen dorsally brown with uniform white mottling forming no distinct pattern; ventrally pallid with brown areas marginally and few small brown areas centrally.

*Carapace*. Pilosity: light uniform cover of fine black hairs forming narrow radiating lines on interstrial ridges; striae indistinct, narrow. Bristles: c.5 long erect black beside posterior striae; c.8 long anteromedially and 10-15 in band beside caput; c.5 long thick and few finer between

PME, and also between ALE; few fine hairs on lateral margins. Fovea broad, procurved.

*Eyes*. Tubercle distinct. Group occupies 0.27 of head-width; front width, back width, length, 57, 70, 50, respectively. MOQ front width, back width, length, 43, 51, 27, respectively. AME:ALE:PME:PLE, 18:19:9:14. Eye interspaces: AME-AME, 0.4; AME-ALE, 1.5; ALF-PLE, 1.3; PME-PME, 1.7; PME-PLE, 0.6; ALE-ALE, 1.3. Back row recurved.

*Chelicerae*. Few long black and many short bristles prodorsally, laterally 3 narrow bands of fine setae. Rastellum absent. Furrow promargin with 10 large and 4 smaller tightly packed teeth, basomesally with 4 small teeth and c.6 granules in basal third.

*Labium*. 0.73 long, 1.33 wide; all setae of similar size in two distinct lines of 5-7 and band posteriorly. Labiosternal suture is two oval sigilla touching.

*Maxillae*. 2.30 long in front, 2.97 long behind, 1.39 wide; with 3-4 cuspules in inner angle, not on mound. Heel slightly produced; anterior lobe indistinct.

*Sternum*. 3.94 long, 3.52 wide. Sigilla all small, suboval, marginal, posterior pair largest.

*Legs*. Basifemoral thorns, thorn spines, and preening combs absent.

	I	II	III	IV	Palp
Femur	5.03	4.61	4.24	6.30	3.94
Patella	3.76	3.33	2.73	3.70	2.79
Tibia	3.33	2.61	2.79	4.61	2.61
Metatarsus	2.67	2.48	2.42	4.67	-
Tarsus	2.73	2.55	2.42	2.42	2.79
Total	17.52	15.58	14.60	21.70	12.13

*Scopula*. Metatarsi: I, II, full, dense, entire; III, thin in distal 1/2, divided by setal band; IV, one triangle prolaterally in distal 1/6. Tarsi: I, II, full, dense, entire; III, divided by narrow setal band 1-4 wide; IV, like III but setal band 3-6 wide flanked on each side by c.4-6 long setae mixed with scopulae.

*Spines*. I, fe p1, d4w, pa 0, ti v1, me 0; II, fe p1, d3w, pa 0, ti p1, v1, me 0; III, fe p4, d2w, r1, pa p2, ti p2, r1, v3, me p2, r2, v4; IV, fe d2w, r1, pa 0, ti r2, v4, me p2, r3, v6; palp, fe p1, d3w, pa 0, ti p1, v5.

*Claws*. Two teeth both short but distal the longer teeth medially on claws of legs I, IV; palpal claw clearly smaller than paired claws and tufts, bare.

*Trichobothria*. Two rows, each of c.10 for 1/2 of tibiae; c.15 on metatarsi in short curving row distally irregular; c.5 distinct clavate and c.16 filiform on tarsi.

*Spermathecae*. Two, each a triangular lobe with small slender outer lobe.

*Spinnerets*. PMS 0.96 long, 0.31 wide, 0.14 apart, and c.0.38 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.23, 0.75, 0.24, 2.22 long, respectively.

#### DISTRIBUTION & HABITAT.

Waterfall area, 6km N of Itakara, North Solomons Province, PNG.

#### *Nihoia crassipes* (Rainbow, 1898)

*Idiomnata crassipes* Rainbow, 1898, p. 329.

*Idioctis crassipes* (Rainbow, 1898); Main, 1982, p. 588.

#### MATERIAL

Holotype, juvenile ♂, Boirave at 1500ft, July, 1896. Type should be in QM (along with other types from the same paper held at QM) but no mygalomorphs from Boirave were listed by Davies & Gallon (1986) and none were since located when all mygalomorph material was audited.

#### REMARKS

Main (1982) transferred this species to *Idioctis* without seeing any material. The eye group shape is the only informative character given (figured) by Rainbow (1898). If the drawing is reasonably accurate, the eye group length excludes the species from *Idioctis*. Also, Main (1982) did not seem concerned that (even then) all prior species of *Idioctis* were either intertidal or were taken near the sea whereas both *I. sordida* and *I. crassipes* were decidedly montane (at least 500m in altitude) and deeply inland.

#### *Nihoia gressitti* sp. nov. (Figs 209, 219, 220, Table 17)

#### MATERIAL EXAMINED

TYPES. Holotype ♂, Wau, 2400m, [7°20'S 146°50'E], 12 Jan 1962, GM, BPB NN, 15109; allotype ♀, Mt Kaindi, south of summit, south of Wau, [altitude 2388 m, 7°21'S 146°30'E], FN 9, 3 Apr 1979, B. Y. Main, WAM 91/1602; paratype, same data, as holotype, WAM 91/1603; 2 ♀♀, Bulldog Road, 19 Apr 1979, WAM 91/1604; ♀, Bulldog Road, 2300m, 15 miles W of Wau, [7°20'S 146°33'E], 14 Feb 1962, J. Sedlacek, BPB No. 15110; ♀, Wau, 1200m, 7°20'S 146°50'E, 14 Mar 1966, BPB no. 15111. All in PPNG.

#### DIAGNOSIS

Differs from *N. aussereri* the short wide eye group, and in having preening combs but lacking scopula on metatarsi III; both species have

basifemoral thorns and antennate domed spermathecae.

Abdomen dark without pattern (♂♂) or with light mottling (♀♀); legs not banded. PMS well developed c.0.4 of width of PLS and 0.5 of length. Lateral eye ratio c.0.6. Rastellum absent. Labial cuspules absent; 7-9 cuspules on maxillae. MALES. Fovea straight. Two rows of teeth on all claws. Tibia I with short conical spur with long straight slender megaspine; microspur small, distinct, triangular, set against long straight megaspine. Bulb small, pyriform, gradual taper to embolus, short tapered gradually with single low keel; retrolateral face of cymbium concave. FEMALES. Basifemoral thorns (I-IV) and preening combs present. Scopula absent on metatarsi III, IV. Spermathecae two, a pair of low coniform antennate domes, the outer lobe slender, apical portion funnel-shaped in lateral view with apex a deep concavity.

#### ETYMOLOGY

For the late J. Linsley Gressitt (June 16, 1914-April 26, 1982), in small recognition of his contributions to entomological studies in the Pacific (Monteith, 1982).

#### DESCRIPTION

##### HOLOTYPE MALE BPB N15109

Carapace 4.19 long, 4.00 wide. Abdomen 3.88 long, 2.69 wide. Total length, 8.

*Colour*. Carapace, chelicerae, and legs orange brown, not banded. Abdomen entirely black without pattern.

*Carapace*. Pilosity: uniform pile of fine black hairs and long black bristles; striae indistinct, narrow. Bristles: 8-10 long erect black beside posterior striae; 8 anteromedially and 15-20 in band beside caput; 5 long thick and few finer between PME, and 7 long thick and 6-8 finer between ALE; light pile of long hairs and long brown bristles on lateral margins. Fovea short, straight.

*Eyes*. Tubercle distinct. Group occupies 0.42 of head-width; front width, back width, length, 58:62:43, respectively. Back row procurved. MOQ front width, back width, length, 40:44:27, respectively. AME:ALE:PME:PLE, 19:17:11:14. Eye interspaces; AME-AME, 0.3; AME-ALE, 0.5; ALE-ALE, 1.5; PME-PLE, 0; PME-PME, 1.2; ALE-PLE 0.9.

*Chelicerae*. Wide band of long brown bristles prodorsally, laterally a narrow band of short bristles. Rastellum absent. Intercheliceral tumes-

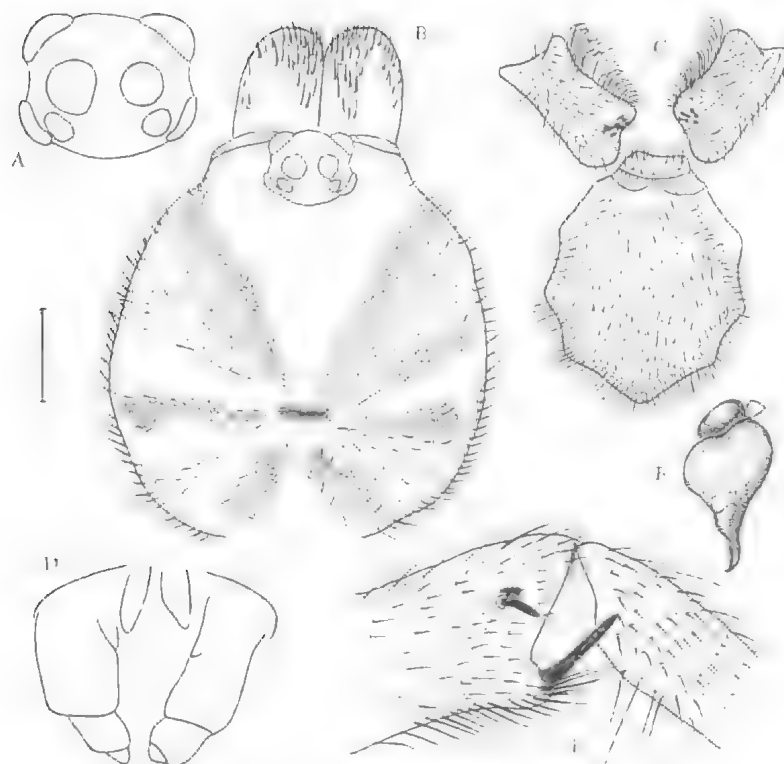


FIG. 219.

*Nihoa gressitti* sp. nov., holotype ♂ (BPB). A, eyes, dorsal view; B, carapace & chelicerae, dorsal view; C, sternum, maxillae & labium, ventral view; D, spinnerets, ventral view; E, tibia & metatarsus I, prolateral view; F, palpal bulb, ventral view. Scale line = 1mm (B, C); 0.5mm (A, D-F).

**Scopula.** Metatarsi: I, II, hairs long, almost dense, in distal 1/2 (I) to 1/3 (II); III, IV, absent. Tarsi: I, II, full, dense, entire; III, IV, divided by narrow setal band 2-3 (III), 6-10 (IV) wide.

**Spines.** I, fe 0, pa 0, ti p1 + megaspine, v3 + megaspine, me 0; II, fe p1w, pa 0, ti p1, v4, me v1; III, fe d1, pa p1, ti p1, r1, v6, me p2, r2, v6; IV, fe d2w, pa 0, ti p3, r2, v8, me p2, r3, v8; palp, fe 0, pa 0, ti p1.

**Claws.** 3-4 teeth (I) in each of two juxtaposed rows, 1 (inner faces) to 4 or 5 (outer) in each of two rows on leg IV; all claws of similar size and slightly higher than tufts.

**Trichobothria.** Two rows, each of 8 for half length of tibiae; c.9 on metatarsi in curving row; 1 clavate proximally and c.12-14 filiform on tarsi.

**Palp.** Bulb small, pyriform, gradual taper to embolus; embolus short tapered gradually with single low keel; retrolateral face of cymbium concave.

**Spinnerets.** PMS 0.31 long, 0.13 wide, 0.11 apart, c.0.36 of basal PLS in diameter. Basal, middle, apical, and total articles of PLS, 0.53, 0.11, 0.05, 0.69 long, respectively.

#### ALLOTYPE FEMALE WAM91/1602

Carapace 8.13 long, 7.50 wide. Abdomen 9.19 long, 6.75 wide. Total length, 22.

**Colour.** Carapace orange brown, chelicerae red brown, legs orange brown, not banded. Abdomen dorsally brown with large, pallid areas anteriorly; posteriorly pallid areas smaller and form two irregularly shaped brown chevrons; ventrally pal-

cence absent. Furrow promargin with 7 spaced teeth, basomesally no granules evident.

**Labium.** 0.72 wide, 0.31 long. Labiosternal suture a continuous shallow groove; few thicker setae medially, fine setae along posterior margins. Cuspules absent.

**Maxillae.** 1.09 long in front, 1.56 long behind, 0.63 wide; with 7-9 blunt cuspules in inner angle. Heel small; anterior lobe indistinct; no lyra or prolateral groove.

**Sternum.** 2.50 long, 2.13 wide; margins hirsute. Sigilla all small, oval, marginal.

**Legs.** Tibia I with short conical spur capped with long straight slender megaspine; microspur small, distinct, triangular, set against long straight megaspine. Legs with light pile of hair and uniform cover of long bristles. Thorn spines, and preening combs absent.

	I	II	III	IV	Palp
Femur	4.06	3.63	3.31	4.75	2.31
Patella	2.25	2.13	1.69	2.00	1.38
Tibia	3.13	2.88	2.38	3.94	1.63
Metatarsus	2.50	2.38	2.75	4.38	-
Tarsus	1.63	1.50	1.19	1.56	0.94
Total	13.57	12.52	11.32	16.63	6.26

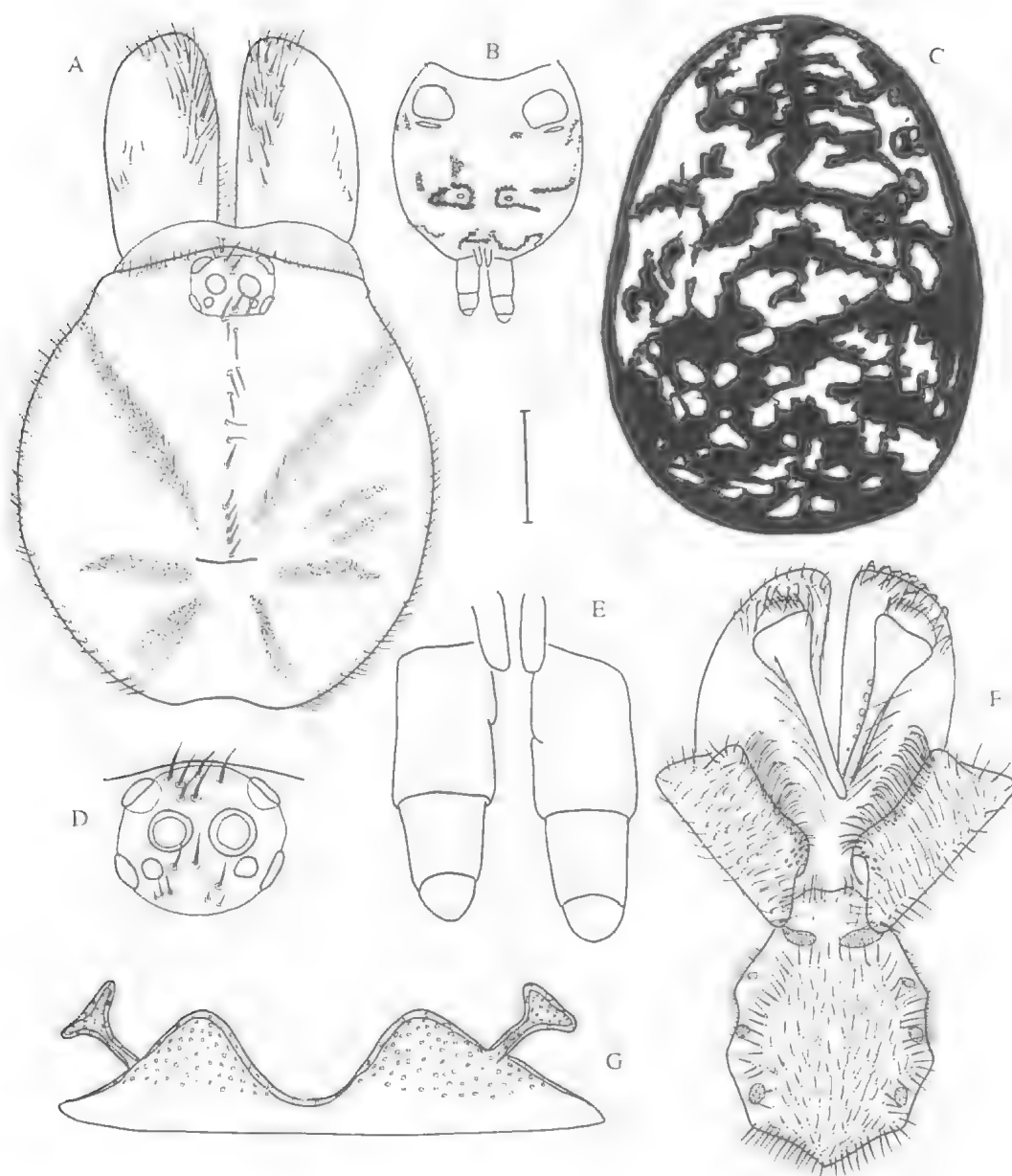


FIG. 220. *Nihoa gressitti* sp. nov., allotype ♀ (WAM91/1602). A, carapace & chelicerae, dorsal view; B, C, abdomen, ventral (B), dorsal view (C); D, eye group, dorsal view; E, spinnerets, ventral view; F, chelicerae, sternum, maxillae & labium, ventral view; G, spermathecae. Scale line = 2mm (A, C, F); 4mm (B); 1mm (D, E); 0.25mm (G).

lid with two brown, paired areas centrally (centred on sigilla) and brown area around spinnerets.

**Carapace.** Pilosity: light but uniform pile of fine brown hairs; striae shallow, glabrous, distinct; Bristles: 8 long thick and several finer

anteromedially; those beside caput slightly longer than rest of caput; 3 long slender and 8-10 finer between PME, c.9 long thick and 10-15 finer between ALE; light brush of hair on lateral margins. Fovea deep, distinctly procurved.

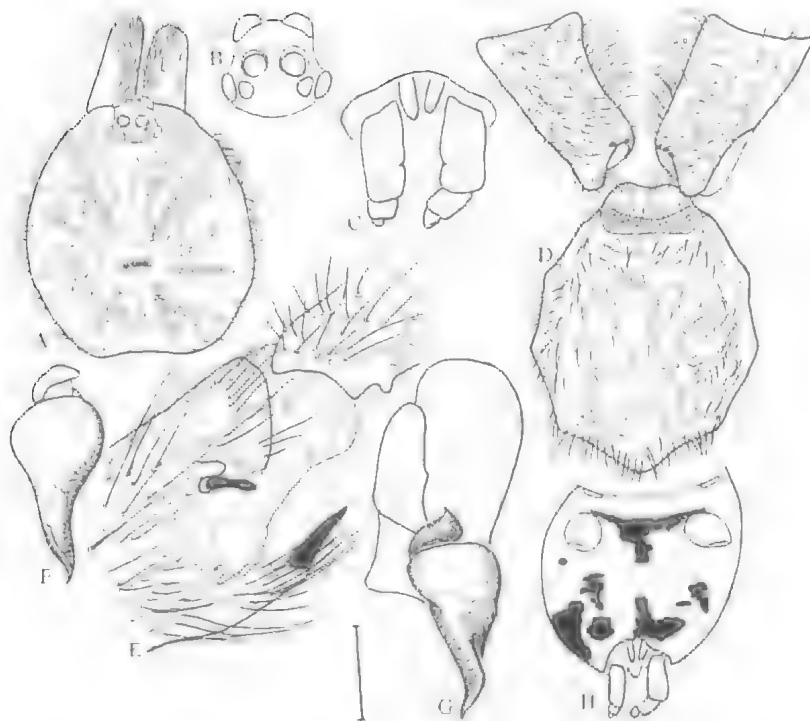


FIG. 221.

*Nihoda gruberi* sp. nov., holotype ♂ (NHMW). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, spinnerets, ventral view; D, sternum, maxillae & labium, ventral view; E, tibia & metatarsus I, prolateral view; F, G, palpal bulb, retrolateral (F), ventral views (G); H, abdomen, ventral view. Scale line = 1mm (B, C, D); 2mm (A, H); 0.5mm (E-G).

**Legs.** Palpal tarsi noticeably narrower at base than distally. Basifemoral thorns many (15-20) on all legs, 6-8 on palpal femora, on palpal trochanters, and prodorsal coxae I, II. Thorn spines absent. Preening combs: 1 of 2

**Eyes.** Tubercle distinct. Group is barely in three rows. Group occupies 0.29 of head-width; front width, back width, length, 56, 59, 40, respectively. Back row straight. MOQ front width, back width, length, 32, 41, 25, respectively. AME:ALE:PME:PLE, 14:15:9:15. Eye interspaces: AME-AME, 0.8; AME-ALE, 0.7; ALE-PLE, 1.1; PME-PME, 1.8; PME-PLE, 0.1; ALE-ALE, 2.4.

**Chelicerae.** Narrow band of moderately long bristles prodorsally, laterally a narrow sparse band of short bristles. Rastellum absent, but low mound entally with many short curved bristles. Furrow promargin with 8 large thick black teeth, basomesally with 8-10 small teeth and 10-15 granules. Upper interface with few short thorn-like setae.

**Labium.** 0.81 long, 1.63 wide; two transverse rows of strong setae on each side of ridge, several strong setae behind them and on leading edge. Labiosternal suture is two narrow separated sigilla.

**Maxillae.** 2.44 long in front, 3.75 long behind, 1.56 wide; with c.8-10 cuspules in inner angle. Heel angular, produced; anterior lobe indistinct.

**Sternum.** 4.38 long, 3.63 wide. Sigilla all c.10% of sternal width long, oval, marginal.

(pro-) to 4 (retro-) setae on pro- and retroventral III, IV.

	I	II	III	IV	Palp
Femur	5.63	5.00	4.56	6.44	4.38
Patella	3.63	3.31	3.00	3.44	2.69
Tibia	3.63	3.25	3.00	4.88	2.31
Metatarsus	2.75	2.63	3.00	5.13	-
Tarsus	1.81	1.56	1.31	1.69	2.81
Total	17.45	15.75	14.87	21.58	12.19

**Scopula.** Metatarsi: longer and higher on prolateral face than ventral or retrolateral; I, II, full, dense, entire; III, IV, entirely absent. Tarsi: I, II, full, dense, entire, save for very narrow setal band not dividing scopula; III, full, dense, divided by setal band 6-8 wide; IV, like III but setal band 6-10 wide.

**Spines.** Femora with thick bristles scored as spines. I, fe p1, pa 0, ti v2, me v2; II, fe p1, pa 0, ti p1, v2, me v2; III, fe 0, pa p2, ti p2, r2, v7w, me p3, r2, v6; IV, fe 0, pa 0, ti r3, v9w, me p1, r1, v9; palp, fe 0, pa 0, ti p1, v7.

**Claws.** 1 (IV)-3 (I) teeth on claws on medial keel; palpal claw about 2/3 height of tufts, bare.

**Trichobothria.** Two rows, each of c.9 for half length of tibiae; c.11 on metatarsi in short (for distal half) curving row; c.6 clavate and c.15 filiform on tarsi. Tarsal organ a distinct distal mound.

**Spermathecae.** Two, a pair of low coniform antennate domes, the outer lobe slender, apical portion funnel-shaped in lateral view with apex a deep concavity.

**Abdomen.** Dorsally with two distinct pallid sigilla (0.20 long) anteriorly presumably joining internally to another pair ventrally (0.20 long) midway between spinnerets and posterior booklungs. A shallow transverse invagination, ental of and beside each posterior booklung aperture, c.  $2/3$  length of aperture, ending blindly.

**Spinnerets.** PMS 0.70 long, 0.25 wide, 0.15 apart, and c. 0.28 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.38, 0.68, 0.35, 2.41 long, respectively.

#### DISTRIBUTION & HABITAT

Rainforest at 730m [2400 feet] at Wau, and rainforest at Mt Kaindi and Bulldog Road, PNG.

#### REMARKS

The eye group of *N. gressitti* is rectangular and only about 1.5 times wider than its back width — wider than any other known species related to *Niho*a from the Indo-Pacific. It is also the only species known with basifemoral thorns on the palp and femora III and has the narrow basal palpal tarsi.

One large ♀ from Bulldog Road has weak preening combs on metatarsi III, IV, as does a much smaller ♀ taken with it. The smaller ♀ also has distinct thorn spines on the upper corner of the maxillae and in the upper inner corners of the chelicerae just in front of the eyes. Neither character is in the large ♀♀. Unlike many other *Niho*a species, the metatarsal trichobothria do not extend for the full length of the article but only for the distal half.

Paratypes collected by B.Y. Main were considered to belong to *Idioctis* by Main (1982, p. 588; pers. comm.) when the concept of *Idioctis* was slightly vague.

*Niho*a *gruberi* sp. nov.  
(Figs 71, 209, 221, Table 17)

#### MATERIAL EXAMINED

TYPE. Holotype ♂, 'Neu-Pommern' [6°00'S 150°00'E], New Britain, NHMW.

#### DIAGNOSIS

Males differ from those of *N. mambulu* in having a microspur, and in the pyriform rather than barrel-shaped bulb and from *N. pictipes* in lacking leg bands, from *N. courti* in the distinct

microspur, and from *N. gressitti* in having only one row of teeth on leg IV.

Abdomen dorsally and ventrally with pattern; legs not banded. PMS well developed, Rastellum absent. Labial cuspules absent; c.3 cuspules on maxillae. MALES. Fovea straight. Teeth only on outer faces of all claws. Tibia I with small subdistal conical spur with long, straight megaspine, microspur small, triangular, set against megaspine 2-3 times its length. Palpal bulb long pyriform with gradual taper to twisted embolus with narrow distal flange. FEMALES. Unknown.

#### ETYMOLOGY

For Dr Jürgen Gruber, Curator of Arachnids, Naturhistorisches Museum Wien, in appreciation for his careful curating that resulted in valuable discoveries for this and other studies on mygalomorphs.

#### DESCRIPTION

##### HOLOTYPE MALE: NHMW

Carapace 5.63 long, 4.88 wide. Abdomen 5.63 long, 4.38 wide. Total length, 12.

**Colour.** Carapace orange brown with faint signs of darker pigmentation on caput, lateral margins, and interstrial ridges, chelicerae orange brown, and legs yellow brown, not banded. Abdomen dorsally damaged, pattern lost; ventrally pallid with brown areas along midline in front of spinnerets, laterally, and between posterior booklung covers. Sternum, maxillae, and labium yellow brown.

**Carapace.** Pilosity: light pile of fine brown hairs mixed with uniform cover of erect black bristles on lateral margins, caput, and interstrial ridges; posterior striae indistinct, narrow. Bristles: 3-5 long erect black and many shorter beside posterior striae; only 3 long evident anteromedially and band of short black beside caput; 2 very long thick and few finer between PME, and one long thick and several finer between ALE; light pile of hair and narrow band of erect black bristles on lateral margins. Fovea short, straight.

**Eyes.** Tubercle distinct. Group occupies 0.33 of head-width; front width, back width, length, 33, 45, 36, respectively. Back row procurved. MOQ front width, back width, length, 29, 31, 21, respectively. AME:ALE:PME:PLE, 12:15:7:11. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.7; ALE-PLE, 1.0; PME-PME, 1.5; PME-PLE, 0.1; ALE-ALE, 0.5.

**Chelicerae.** Relatively wide band of long brown bristles prodorsally, laterally a narrow band of

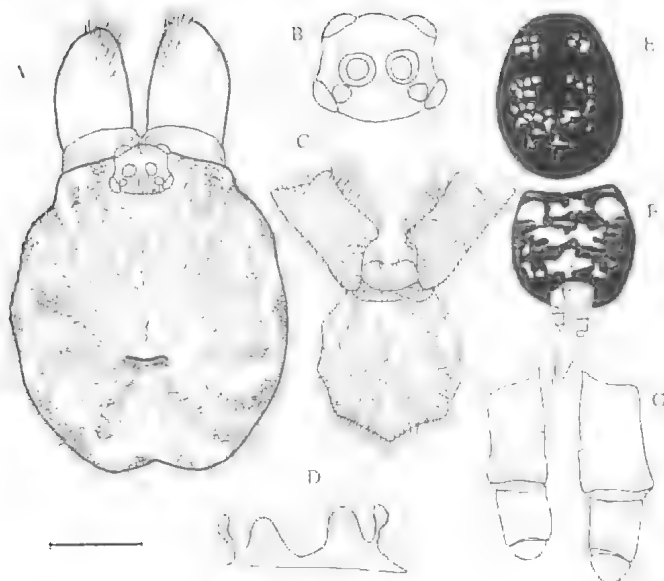


FIG. 222. *Nihoa itakara* sp. nov., holotype ♀ (QMS8276). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, sternum, maxillae & labium, ventral view; D, spermathecae; E, F, abdomen, dorsal (E), ventral view (F); G, spinnerets, ventral view. Scale line = 1mm (B, G); 2mm (A, C); 4mm (E, F); 0.5mm (D).

long setae. Rastellum and mound absent. Furrow promargin with 8 large, 2 small anterior, and 2 minute teeth, basomesally with 3 granules.

**Labium.** 0.40 long, 0.56 wide. Labiosternal suture a narrow groove.

**Maxillae.** 1.40 long in front, 1.80 long behind, 0.80 wide; 2-3 cuspules in inner angle. Heel small, angular; anterior lobe indistinct.

**Sternum.** 3.00 long, 2.28 wide. Sigilla all very small, oval, marginal.

**Legs.** Tibia I with small subdistal conical spur with long, straight megaspine, microspur small, triangular, set against megaspine 2-3 times its length. Thorn spines and preening combs absent.

	I	II	III	IV	Palp
Femur	4.88	4.69	4.19	5.75	2.88
Patella	2.88	2.75	2.19	2.44	1.88
Tibia	3.81	3.56	2.88	4.63	2.13
Metatarsus	2.69	2.94	3.25	5.13	-
Tarsus	1.75	1.69	1.38	1.75	1.25
Total	16.01	15.63	13.89	19.70	8.14

**Scopula.** Metatarsi: I, II, full, dense, entire but hairs shorter proximally; III, two narrow triangles in distal 1/4; IV, absent. Tarsi: I, II, full, dense, entire; III, entire save for 3 setae; IV, narrowly divided by setal band 2-3 wide.

**Spines.** I, fe p2, d4, pa 0, ti p1, v5+ 2 megaspines, me v1 basal; II, fe p3, d4, r2, pa 0, ti p1, v7, me v1 basal; III, fe p4, d5, r3, pa p2, ti p2,

r3, v6, me p2, r2, v5; IV, fe p1, d3, r1, pa 0, ti r3, v8, me p3, r3, v7; palp, fe p1, pa 0, ti v2.

**Claws.** 2-3 small teeth on outer faces of claws (I, IV).

**Trichobothria.** Two rows, each of c.8 for two-thirds of tibiae; c.14 on metatarsi in curving row, distally wide; c.4 clavate and c.10 filiform on tarsi.

**Palp.** Bulb long pyriform with gradual taper to twisted embolus with narrow distal flange; cymbium dimorphic, retrolateral face concave.

**Spinnerets.** PMS 0.45 long, 0.15 wide, 0.15 apart, and c.0.30 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.00, 0.35, 0.20, 1.55 long, respectively.

#### DISTRIBUTION

New Britain; no further data.

*Nihoa itakara* sp. nov.  
(Figs 209, 222, Table 18)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Itakara, 9°12'S 148°16'E, Oro Province, PNG, D.J. Court, 15 Mar 1986, QMS8276.

#### DIAGNOSIS

Females differ from those of *N. pictipes* in the wide eye group and from *N. gressitti* in the distinctly banded legs III, IV.

PMS well developed. Maxillae with c.13 cuspules; labium without cuspules. Abdomen mottled; legs banded. FEMALES. Basifemoral thorns on I, II, IV; preening combs on metatarsi III, IV. Scopula on metatarsi III, absent on IV, Rastellum absent. Spermathecae two, each with a large triangular inner mound and slender outer lobe with slight apical expansion. MALES. Unknown.



## DESCRIPTION

## HOLOTYPE FEMALE QMS8276

Carapace 7.50 long, 6.09 wide. Abdomen 6.25 long, 5.63 wide. Total length, 16.

**Colour.** Carapace red brown with brown marks on caput and in reticulated areas along margins, chelicerae red brown, and legs orange brown with brown bands on distal femora, patellae, tibiae, and metatarsi, and proximally on tibiae and metatarsi. Abdomen dorsally brown with large white mottling forming two clusters anteriorly and irregular group posteriorly around brown centre; ventrally brown with large pallid areas between and behind posterior booklung covers and transversely in front of spinnerets.

**Carapace.** Pilosity: light uniform cover of fine black hairs on caput and in narrow lines beside striae; striae indistinct, narrow. Bristles: 3-6 erect black beside posterior striae; c.8 anteromedially and many fine in band beside caput; 2 long thick and many finer between PME, and 4 long thick and several finer between ALE; short fine hairs on lateral margins. Fovea short, procurved.

**Eyes.** Tubercle distinct. Group occupies 0.34 of head-width; front width, back width, length, 50, 57, 40, respectively. Back row recurved. MOQ front width, back width, length, 33, 43, 22, respectively. AME:ALE:PME:PLE, 13:19:9:13. Eye interspaces: AME-AME, 0.5; AME-ALE, 1.4; ALE-PLE, 0.9; PME-PME, 1.9; PME-PLE, 0.7; ALE-ALE, 1.0.

**Chelicerae.** Few long and many short brown bristles prodorsally, laterally sparsely hirsute. Rastellum and mound absent. Furrow promargin with 9 large and 2 small grouped teeth, basomesally with 8 small and 15-20 fine granules in basal third.

**Labium.** 0.55 long, 0.85 wide; 5 setae in line medially, three in line behind that; few short fine setae along posterior margin. Labiosternal suture is two joined sigilla.

**Maxillae.** 1.88 long in front, 2.79 long behind, 1.27 wide; with 13-14 cuspules in inner angle, not on mound. Heel produced; anterior lobe broad, indistinct.

**Sternum.** 4.30 long, 3.09 wide. Sigilla all small, circular, marginal.

**Legs.** 2-6 basifemoral thorns on I, II, IV. Thorn spines absent. Preening combs: 1 of 2 weak setae on retroventral III, IV.

**Scopula.** Metatarsi: I, II, full to distal 3/4(II), dense, entire; III, small cluster prolaterally in distal 1/5; IV, absent. Tarsi: I, II, full, dense, entire; III, divided by narrow band of 8-10 long setae along margins and short pallid setae from

band 6-8 wide; IV, like III, but medial setae stronger darker.

**Spines.** I, fe p1, d6w pa0, ti v4w, me v1w distal; II, fe p1, pa p0, ti p1, v3, me v2; III, fe p1, d1, r1, pa p2, ti p2, r2, v8, me p3, r2, v7; IV, fe r1, pa 0, ti p1, r3, v9, me p3, r2, v10; palp, fe p1, pa 0, ti p2, v7.

	I	II	III	IV	Palp
Femur	4.67	4.12	3.52	5.52	3.39
Patella	3.15	2.85	2.48	2.97	2.36
Tibia	3.03	2.79	2.73	4.24	2.30
Metatarsus	2.24	2.48	2.79	5.15	-
Tarsus	2.18	2.12	1.88	2.42	2.61
Total	15.27	14.36	13.40	20.30	10.66

**Claws.** One large and one small tooth medially on legs; palpal claw c. half height of tufts, bare.

**Trichobotria.** Two rows, each of c.9 for 3/4 of tibiae; c.12 on metatarsi in short curving and disordered band distally; c.5 small clavate and c.12 filiform on tarsi.

**Spermathecae.** Two, each with a large triangular inner mound and slender outer lobe with slight apical expansion.

**Spinnerets.** PMS 0.31 long, 0.12 wide, 0.19 apart, and c.0.25 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.40, 0.48, 0.24, 2.12 long, respectively.

## DISTRIBUTION

Itakara, Oro Province, PNG

*Nihoa kaindi* sp. nov.

(Figs 209, 223, Table 17)

## MATERIAL EXAMINED

**Types.** Holotype ♀, Mt Kaindi, south of Wau. [altitude 2388 m, 7°21'S 146°30'E], PNG, AMNH; one ♀ paratype, same data, AMNH.

## DIAGNOSIS

Females differ from those of the sympatric *N. gressitti* by the much smaller size and lacking basifemoral thorns, from *N. tatei* by normal AME and having of preening combs.

Small. PMS well-developed. Abdomen dorsally and ventrally mottled; legs not banded. Labium without cuspules; maxillae with c.5 cuspules. Rastellum of 8-10 short thick slightly curved spines. FEMALES. Basifemoral thorns and thorn spines absent; preening combs present. Scopula in distal 1/3-1/4 of metatarsi I, II, absent on metatarsi III, IV. Metatarsus I shorter than tibia. Spermathecae two, each a low mound with longer broad lateral lobe with apical expansion. MALES. Unknown.

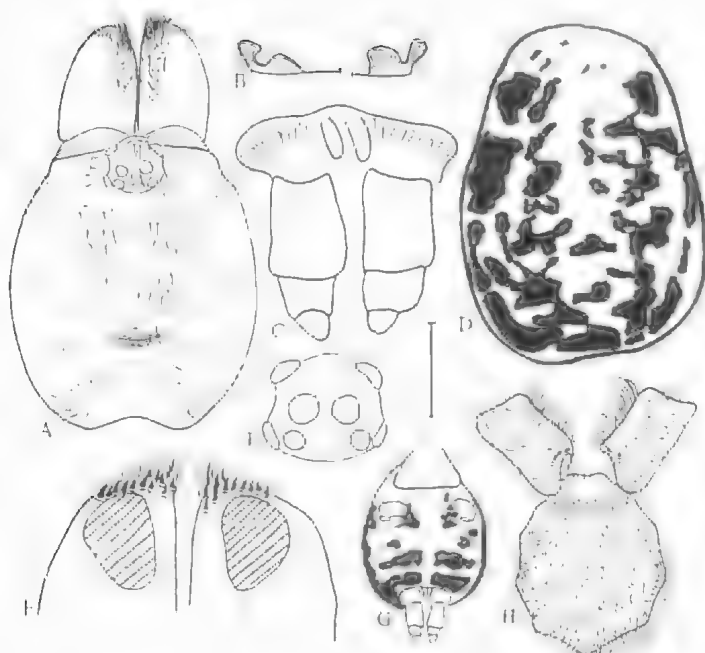


FIG. 223. *Nihoa kaindi* n. sp., holotype ♀ (AMNH). a, carapace & chelicerae, dorsal view; B, spermathecae; C, spinnerets, ventral view; D, G, abdomen, dorsal (D), ventral view (G); E, eyes, dorsal view; F, apical chelicerae with rastellum, ventral view; H, sternum, maxillae & labium, ventral view. Scale line = 1mm (A, D, H); 2mm (G); 0.5mm (C, E, F); 0.25 (B).

#### DESCRIPTION

##### HOLOTYPE FEMALE AMNH

Carapace 3.20 long, 2.72 wide. Abdomen 3.60 long, 2.48 wide. Total length, 8.

**Colour.** Carapace, chelicerae, and legs orange brown, legs not banded. Abdomen dorsally brown with large white mottling forming no regular pattern but large white areas anteriorly and medially; ventrally pallid with brown areas in front of spinnerets, in front a transverse pallid band, then two more brown areas, a large pallid area, and two brown patches on inner edges of posterior booklung covers.

**Carapace.** Almost glabrous save for few fine hairs on lateral margins and many bristles. Striae indistinct, shallow. Bristles: few fine erect black beside posterior striae; one very long and 8-10 shorter anteromedially and distinct wide band of long thick brown beside caput; one long thick and few finer between PME; one long thick and several finer between ALE; lateral margins almost glabrous. Fovea short, deep, procurved. Clypeus region with three setae on sclerotised area.

**Eyes.** Tubercle low, distinct. Group occupies 0.32 of head-width; front width, back width, length, 25, 26, 18, respectively. Back row procurved. MOQ front width, back width, length, 16, 18, 12, respectively. AME:ALE: PME:PLE, 6:8:5:6. Eye interspaces: AME-AME, 0.5; AME-ALE, 0.8; ALE-PLE, 1.2; PME-PME, 1.5; PME-PLE, 0.2; ALE-ALE, 2.0.

**Chelicerae.** Narrow band of long erect brown bristles prodorsally, laterally glabrous. Rastellum of 8-10 short, thick, slightly curved spines on inner margin near fang and laterally. Furrow promargin with 7 large and small spaced teeth, basomesally with 10-15 small teeth.

**Labium.** 0.35 long, 0.65 wide; distinct line of 6 long setae behind medial ridge, few finer setae behind them, many thick setae on leading edge. Labiosternal suture a narrow groove.

**Maxillae.** 0.83 long in front, 1.25 long behind, 0.50 wide; with 5 blunt cuspules in inner angle. Heel broad, rounded;

anterior lobe indistinct.

**Sternum.** 1.70 long, 1.65 wide. Sigilla all small, oval, marginal.

**Legs.** Basifemoral thorns and thorn spines absent. Preening combs: 1 of 3 setae on retroventral III, IV.

	I	II	III	IV	Palp
Femur	1.72	1.60	1.48	2.28	1.48
Patella	1.40	1.28	1.12	1.36	1.08
Tibia	1.16	1.04	0.96	1.68	0.72
Metatarsus	0.72	0.72	0.96	1.80	-
Tarsus	0.60	0.60	0.76	0.76	0.76
Total	5.60	5.24	5.04	7.88	4.04

**Scopula.** Metatarsi: I, II, very thin, in distal 1/3-1/4, prolateral, divided by setae; III, IV, entirely absent. Tarsi: I, II, hairs short, thin but full, divided by setal band 2-4 wide; III, IV, very sparse, reduced to two narrow lateral bands of hair.

**Spines.** I, fe 0, pa 0, ti v1w, me v1 distal; II, fe 0, pa 0, ti v2w, me v2 basal and distal; III, fe 0, pa p1, ti p1, r1, v3w, me p2, r2, v5; IV, fe 0, pa 0, ti p1w, r1, v7, me p3, r3, v8; palp, fe 0, pa 0, ti v5.

**Claws.** One small tooth on paired claws medially or laterally (IV); palpal claw c. as high as tufts, bare.

**Trichobothria.** Two rows, each of c. 6 for two-thirds of tibiae; c. 9 on metatarsi in curving row; c. 2 clavate and 9 filiform on tarsi.

**Spermathecae.** Two, each a low mound with longer broad lateral lobe with apical expansion.

**Spinnerets.** PMS 0.17 long, 0.06 wide, 0.05 apart, and c. 0.17 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 0.55, 0.25, 0.15, 0.95 long, respectively.

#### DISTRIBUTION & HABITAT

In rainforest at Mt Kaindi, just south of Wau, New Guinea.

*Nihoia karawari* sp. nov.  
(Figs 209, 224, Table 18)

#### MATERIAL EXAMINED

**TYPE.** Holotype ♀, Karawari Lodge, Karawari R, 4°23'S 143°23'E, East Sepik Province, PNG, 8 July 1986, D.J. Court, QMS8284.

#### DIAGNOSIS

Females differ from those of *N. pictipes* in having few basifemoral thorns, very slender lateral lobe to spermathecae, subquadrate eye group, and a straight fovea.

PMS well developed. Maxillae with c. 11 cuspules; labium lacks cuspules. Abdomen mottled; legs annulated. Rastellum absent. **FEMALES.** Basifemoral thorns on I, II, IV; preening combs absent. Scopula on metatarsi III, IV. Spermathecae two, each with a large triangular inner mound and slender outer lobe with apical expansion. **MALES.** Unknown.

#### DESCRIPTION

##### HOLOTYPE FEMALE QMS8284

Carapace 6.72 long, 5.78 wide. Abdomen 7.66 long, 5.16 wide. Total length, 15.

**Colour.** Carapace orange brown without darker markings, chelicerae red brown; legs orange brown with brown bands on distal femora (light), patellae (light), tibiae, and metatarsi, proximally on tibiae and almost medially on metatarsi. Abdomen dorsally brown with fine white mottling; ventrally light brown with darker areas between booklungs, and in front of spinnerets.

**Carapace.** Pilosity: uniform pile of fine black hairs, not forming distinct radial lines on interstitial ridges; striae indistinct, narrow. Bristles: 6-8 erect black beside posterior striae; 10 long anteromedially and 10-15 in band beside caput; c. 7 long thick and few finer between PME, and c. 4 long thick and few finer between ALE; short golden brown hairs on lateral margins. Fovea short, procurved.

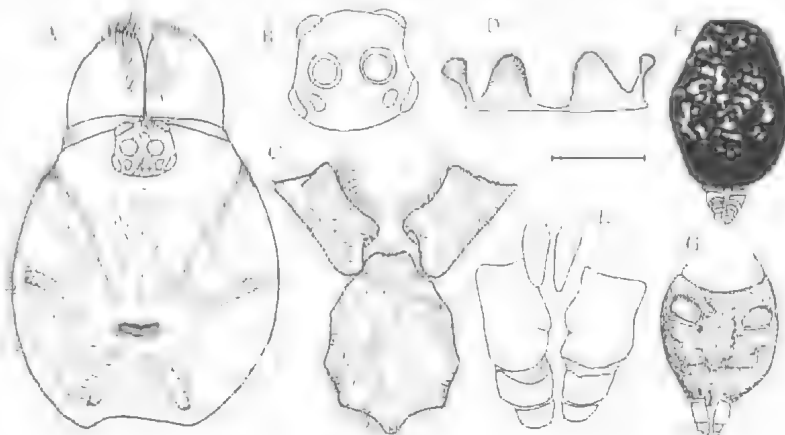
**Eyes.** Tubercle distinct. Group occupies 0.31 of head-width; front width, back width, length, 50, 56, 44, respectively. MOQ front width, back width, length, 37, 40, 27, respectively. AME:ALE:PME:PLE, 15:17:10:16. Eye interspaces: AME-AME, 0.5; AME-ALE, 1.3; ALE-PLE, 1.1; PME-PME, 1.5; PME-PLE, 0.7; ALE-ALE, 1.2. Back row recurved.

**Chelicerae.** Many short thick brown bristles prodorsally, laterally almost glabrous. Rastellum absent, mound indistinct. Furrow promargin with 9 large mixed tightly with 3 small teeth, basomesally with 10 small teeth and several fine granules.

**Labium.** 0.61 long, 0.97 wide; six thick setae in front of midline; one thick centrally behind that;

FIG. 224.

*Nihoia karawari* sp. nov., holotype ♀ (QMS8284). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, sternum, maxillae & labium, ventral view; D, spermathecae; E, spinnerets, ventral view; F, G, abdomen, dorsal (F), ventral view (G). Scale line = 1mm (B, E); 2mm (A, C); 4mm (F, G); 0.5mm (D).



few finer along posterior margin. Labiosternal suture a broad shallow groove.

*Maxillae*. 1.58 long in front, 2.48 long behind, 1.27 wide, with 10-13 cuspules in inner angle, not mounded. Heel produced; anterior lobe indistinct.

*Sternum*. 3.39 long, 2.79 wide. Sigilla all small, oval, marginal.

*Legs*. 4-6 basifemoral thorns on I, II, IV. Thorn spines and preening combs absent.

	I	II	III	IV	Palp
Femur	3.94	3.76	3.58	5.27	3.27
Patella	2.79	2.79	2.42	2.85	1.94
Tibia	2.79	2.73	2.42	4.00	2.12
Metatarsus	2.18	2.12	2.42	4.55	-
Tarsus	2.06	2.00	1.64	2.12	2.06
Total	13.76	13.40	12.48	18.79	9.39

*Scopula*. Metatarsi: I, II, full, dense, entire; III, two clusters in distal third; IV, two small narrow clusters in distal 1/8. Tarsi: I, II, full, dense, entire; III, divided by narrow setal band 4-6 wide; IV, divided by wider setal band 6-10 wide.

*Spines*. I, fe p1, pa 0, ti v1w, me 0; II, fe p1, pa 0, ti p2, v1w, me 0; III, fe p2w, r2w, pa p2, r1, ti p2, r2, v4, me p2, r2, v4; IV, fe 0, pa r1, ti r3, v9, me p3, r2, v7; palp, fe p1, pa p2, ti v7.

*Claws*. I (IV)-2 (I) small teeth medially on claws; palpal claw about half height of tufts, bare.

*Trichobothria*. Two rows, each of c.10 for 2/3 of tibiae; c.12 on metatarsi in short curving row forming band distally; c.4-6 small clavate and c.12-15 filiform on tarsi.

*Spermathecae*. Two, each with a large triangular inner mound and slender outer lobe with apical expansion.

*Spinnerets*. PMS 0.72 long, 0.29 wide, 0.17 apart, and c.0.28 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.25, 0.46, 0.27, 1.98 long, respectively.

#### DISTRIBUTION

Karawari River, East Sepik Province, PNG.

#### BIOLOGY

Taken with disc-shaped egg sac (16mm diameter) of translucent silk and containing 40 subspherical pallid yellow eggs each c.1.9mm in diameter.

*Nihoia lambleyi* sp. nov.  
(Figs 209, 225, Table 17)

#### MATERIAL EXAMINED

TYPE. Holotype ♂, University Campus, Waigani, Port Moresby, 9°27'S 147°09'E, National Capital District, PNG, 1 Jun 1987, P. Lambley, QMS8279.

#### DIAGNOSIS

Differs from *N. madang* in the palpal bulb having broad, thin, serrated keel in distal third that twists across bulb down to acuminate embolus with many fine keels subapically and in having an intercheliceral tumescence.

Abdomen with distinct pattern dorsally and ventrally. PMS well developed. Maxillae with c.15 cuspules; labium lacks cuspules. FEMALES. Unknown. MALES. Tibia I with raised spur and straight megaspine apically; microspur thumb-like, distinct; upper megaspine almost twice length of microspur, straight; spur set distally on proventral corner. Bulb pyriform, gradual embolic origin; broad, thin, serrated keel arises in distal third twists across bulb down to acuminate embolus with many fine keels subapically; small oval glabrous depression in distal 1/3 on retroventral edge of tibia. Claws on I with 2 rows of teeth, on IV with one medial row. Chelicerae without teeth basomesally but with intercheliceral tumescence.

#### ETYMOLOGY

For P. Lambley.

#### DESCRIPTION

##### HOLOTYPE MALE QMS8279

Carapace 7.66 long, 6.41 wide. Abdomen 7.97 long, 5.31 wide. Total length 18.

*Colour*. Carapace, chelicerae, and legs orange brown without darker markings or bands. Abdomen dorsally pallid with brown herring bone pattern; ventrally brown with darker markings centrally, between booklung covers, and near spinnerets.

*Carapace*. Pilosity: uniform cover of short strong black bristles in radiating lines and bush of grey hair, dense on caput, lighter elsewhere; striae indistinct, narrow, save anterior pair. Bristles: c.8 long erect black beside posterior striae; 11 thick plus 3 very long anteromedially and many in band beside caput; c.7 long thick and few finer between PME, and c.8 long thick and few finer between ALE; dense bush of long gray hairs and strong curved black bristles on lateral margins. Fovea short, clearly procurved.

*Eyes*. Tubercle distinct. Group occupies 0.26 of head-width; front width, back width, length, 40, 52, 40, respectively. MOQ front width, back width, length, 32, 37, 23, respectively. AME:ALE:PME:PLE, 14:15:8:15. Eye interspaces: AME-AME, 0.5; AME-ALE, 1.5; ALE-PLE, 1.4; PME-PME, 1.6; PME-PLE, 0.7; ALE-ALE, 1.1. Back row slightly procurved.

**Chelicerae.** Broad band of long black bristles prodorsally, laterally a wide band of short black setae. Rastellum absent. Intercheliceral tumescence a small pallid area. Furrow promargin with 6 large mixed widely with 6 small teeth, basomesally without teeth or granules.

**Labium.** 0.46 long, 0.92 wide; all bristles of similar size. Labiosternal suture a broad shallow groove.

**Maxillae.** 1.93 long in front, 2.63 long behind, 1.13 wide; with 15-16 long spindle-shaped cuspules in inner angle, not on mound. Heel narrow produced; anterior lobe narrow distinct.

**Sternum.** 3.52 long, 3.08 wide. Sigilla: posterior pair larger; all oval, marginal, small.

**Legs.** Tibia I with raised spur and straight megaspine apically; microspur triangular, small, distinct; upper megaspine almost twice length of microspur, straight; spur set distally on proventral corner. Scopulate surface of metatarsi and tarsi I, II, and tarsi III, IV incrassate. Basifemoral thorns, thorn spines, and preening combs absent.

	I	II	III	IV	Palp
Femur	5.76	5.15	4.61	6.42	3.64
Patella	3.15	3.15	2.48	3.27	2.18
Tibia	4.06	3.94	3.33	5.09	2.30
Metatarsus	3.39	3.33	4.00	6.55	-
Tarsus	2.55	2.55	2.61	2.91	1.52
Total	18.91	18.12	17.03	24.24	9.64

**Scopula.** Metatarsi: I, II, full to 2/3 (II), dense, entire; III, in distal 1/3, divided by setal band; IV, like III but in distal 1/4. Tarsi: I, II, full, dense, entire; III, narrowly divided by setal band 2-3 wide; IV, narrowly divided by setal band 4-6 wide.

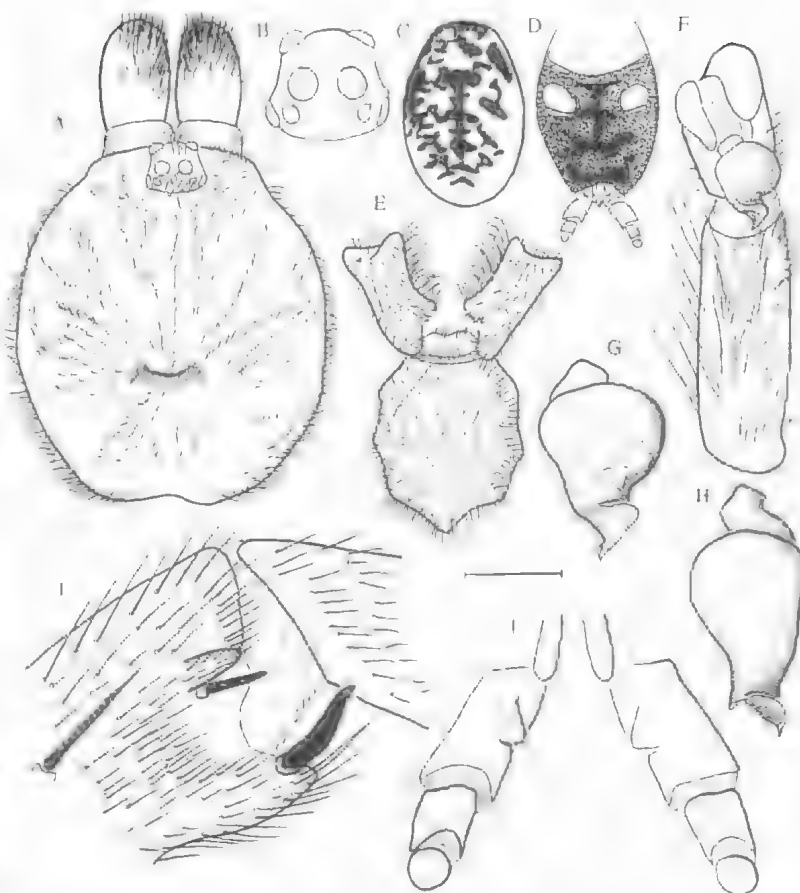


FIG. 225. *Nihoa lambleyi* sp. nov., holotype ♂ (QMS8279). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, D, abdomen, dorsal (C), ventral (D) view; E, sternum, maxillae & labium, ventral view; F, palpal tibia, cymbium & bulb, ventral view; G-H, palpal bulb, retrolateral (H), ventral (G); I, tibial spur, prolateral leg I; J, spinnerets, ventral view. Scale line = 1 mm (B, F); 2 mm (A, E); 4 mm (C, D); 0.5 mm (G-J).

**Spines.** I: fe p1, d1, pa 0, ti p2 + megaspine, v5 + megaspine, me v1. II: fe p1, pa 0, ti p2, v4, me v1. III: fe p2, d1, r3, pa p1, r1, ti p2, r2, v7, me p3, r2, v4. IV: fe d3, r2, pa r1, ti p3, r4, v9, me p2, r3, v5. Palp: fe p1, pa 0, ti p1, v3.

**Claws.** 4-5 long teeth on claws in each of 2 rows on leg I, 2 small teeth medially on claws of leg IV.

**Trichobothria.** Two rows, each of c.8 for 2/3 of tibiae; c.10 on metatarsi in curving row; c.6 clavate and c.20 filiform on tarsi.

**Palp.** Bulb pyriform, gradual embolic origin; broad thin serrated keel arises in distal third twists orthogonally across bulb and down to acuminate embolus with many fine keels subapically; small oval glabrous depression in distal 1/3 on

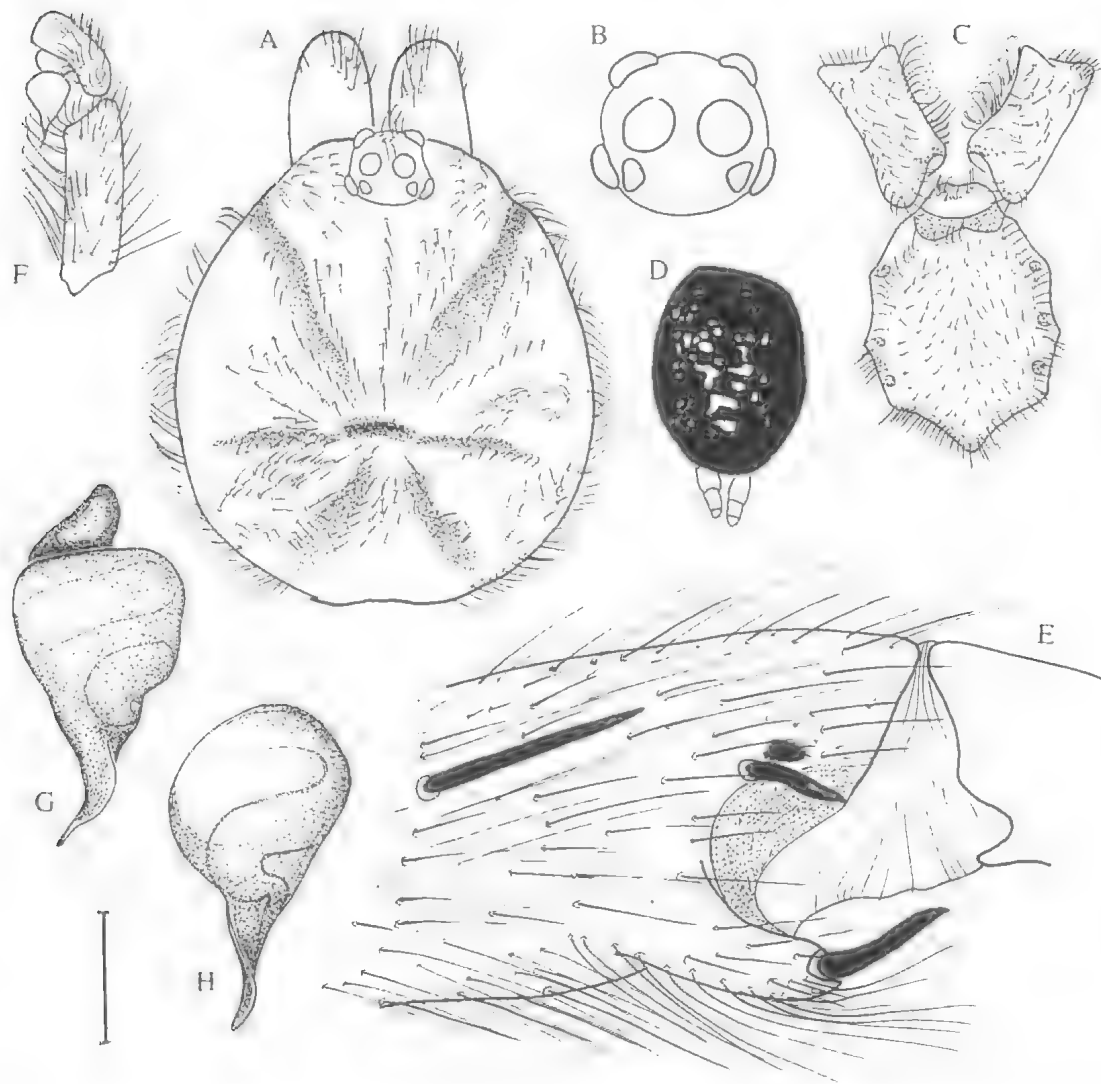


FIG. 226. *Nihoa madang* sp. nov., holotype ♂ (MV K2203). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, sternum, maxillae & labium, ventral view; D, abdomen, dorsal view; E, tibia & metatarsus I, prolateral view; F, palpal bulb & tibia, retrolateral view; G, H, palpal bulb, retrolateral (H), ventral (G) view. Scale line = 2mm (A, C, F); 4mm (D); 1mm (B); 0.5(E, G, H).

retroventral edge of tibia; retrolateral face of cymbium concave.

**Spinnerets.** PMS 0.72 long, 0.22 wide, 0.30 apart, and c.0.29 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 0.96, 0.58, 0.34, 1.88 long, respectively.

#### DISTRIBUTION & HABITAT

University Campus, Waigani, Port Moresby, National Capital District, PNG.

#### *Nihoa madang* sp. nov. (Figs 71, 209, 226. Table 18)

#### MATERIAL EXAMINED

TYPE. Holotype ♂, Madang, [5°15'S 145°50'E], PNG, April 1962, Sister Schneider, MV K2203.

#### DIAGNOSIS

Males differ from those of *N. pictipes* by having a microspur and associated megaspine on tibia I, and lacking distinct keels near the embolus of



♂♂, from *N. gressitti* in the longer eye group, and from *N. annulata* in lacking cuspules and having many white areas breaking up the brown area.

Abdomen with distinct pattern; legs annulated. PMS well developed. Rastellum absent. No cuspules on labium, c.11 on maxillae. MALES. Fovea straight. Two rows of teeth on claws of leg I, only one row on medial keel of IV. Tibia I distoventrally with long conical spur bearing strong curved megaspine, microspur thumb-like, set against straight megaspine. Palpal bulb small, pyriform tapers to slender embolus and single low raised keel. FEMALES. Unknown

#### DESCRIPTION

HOLOTYPE MALE MVK2203

Carapace 6.88 long, 6.25 wide. Abdomen 6.25 long, 4.69 wide. Total length, 15.

**Colour.** Carapace orange brown with darker areas marginally and in striae, chelicerae and legs orange brown, tibiae and metatarsi III, IV with slightly darker annulations. Abdomen dorsally brown with many small white areas forming irregular V medially; ventrally pallid with transverse brown areas medially and posteriorly.

**Carapace.** Pilosity: bush of long golden brown hairs on posterior corners and on caput; bush less dense on lateral margins; striae distinct, narrow, glabrous. Bristles: 8-10 slightly thicker beside posterior striae; 10-15 anteromedially and more finer in band beside caput; 8 long and few finer between PME, and 6 long thick and several finer between ALE; long golden hairs and long curved brown bristles on lateral margins. Fovea short, straight.

**Eyes.** Tubercle distinct. Group occupies 0.35 of head-width; front width, back width, length, 72:87:63, respectively. Back row procurved. MOQ front width, back width, length, 60:65:43, respectively. AME:ALE:PME:PLE, 28:23:14:23. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.5; ALE-ALE, 1.1; PME-PLE, 0; PME-PME, 1.4; ALE-PLE, 1.1.

**Chelicerae.** Wide band of straight brown bristles and long hairs prodorsally, laterally a narrow band of short hair. Rastellum absent. Intercheliceral tumescence absent. Furrow promargin with 12 closely spaced teeth, basomesally with c.12 small teeth and 10-15 granules.

**Labium.** 1.09 wide, 0.56 long. Labiosternal suture a broad continuous groove. Setae only in anterior third of labium, save for small cluster of 6 centrally.

**Maxillae.** 1.97 long in front, 2.56 long behind, 0.97 wide; 11 cuspules in inner angle. Heel slightly produced; anterior lobe indistinct.

**Sternum.** 3.72 long, 3.03 wide. Sigilla all small, oval, marginal.

**Legs.** Tibia I distoventrally with long conical spur bearing strong curved megaspine, microspur thumb-like, set against straight megaspine. Thorn spines absent. Distinct pile of long brown hairs on femora (most noticeable) to metatarsi. Preening combs absent but weakly grouped set of 3 setae on retroventral III, IV.

	I	II	III	IV	Palp
Femur	6.31	6.13	5.56	6.44	3.75
Patella	3.56	3.38	2.94	3.19	2.31
Tibia	5.13	4.69	4.38	6.25	2.75
Metatarsus	4.25	4.06	4.69	7.56	-
Tarsus	2.19	2.19	1.88	2.38	1.94
Total	21.44	20.45	19.45	25.82	10.75

**Scopula.** Metatarsi: I, II, thin, distal 2/3 (I) to 1/2 (II), basally divided; III, small divided cluster in distal 1/5; IV, absent. Tarsi: I-III, full, moderately dense, entire; IV, divided by setal band 2-4 wide.

**Spines.** I: fe p1, d1, pa 0, ti p1 + megaspine, v1 + megaspine, me v1w. II: fe p1, d2, pa 0, ti p2, v2, me v1w. III: fe p2, d1, r2, pa p3, r1, ti p2, r2, v7, me p2, r2, v4. IV: fe r1, pa 0, ti p2, r3, v8, me p3, r3, v6. Palp: fe p1, pa 0, ti p1, v4.

**Claws.** 3 teeth in each of 2 rows (I), 1-2 teeth on medial keel (IV).

**Trichobothria.** Two rows, each of c.10 for 3/4 of tibiae; c.15 on metatarsi in slightly curving row; c.17 filiform (none clavate) on tarsi.

**Palp.** Bulb small, pyriform tapering gradually to slender embolus and single low raised keel; retrolateral face of cymbium concave.

**Spinnerets.** PMS 0.59 long, 0.23 wide, 0.11 apart, c.0.29 of basal PLS in diameter. Basal, middle, apical, and total articles of PLS, 1.25, 0.55, 0.23, 2.03, long respectively.

#### DISTRIBUTION

Madang, PNG.

*Nihoa maior* (Kulczynski, 1908)  
(Figs 209, 227, Table 17)

*Encyocrypta maior* Kulczynski, 1908, p. 438.

*Idiommatia major* (Kulczynski, 1908); Roewer, 1942, p. 215 (invalid emendation).

*Idiommatia majus* (Kulczynski, 1908); Bonnet, 1957, p. 2287.



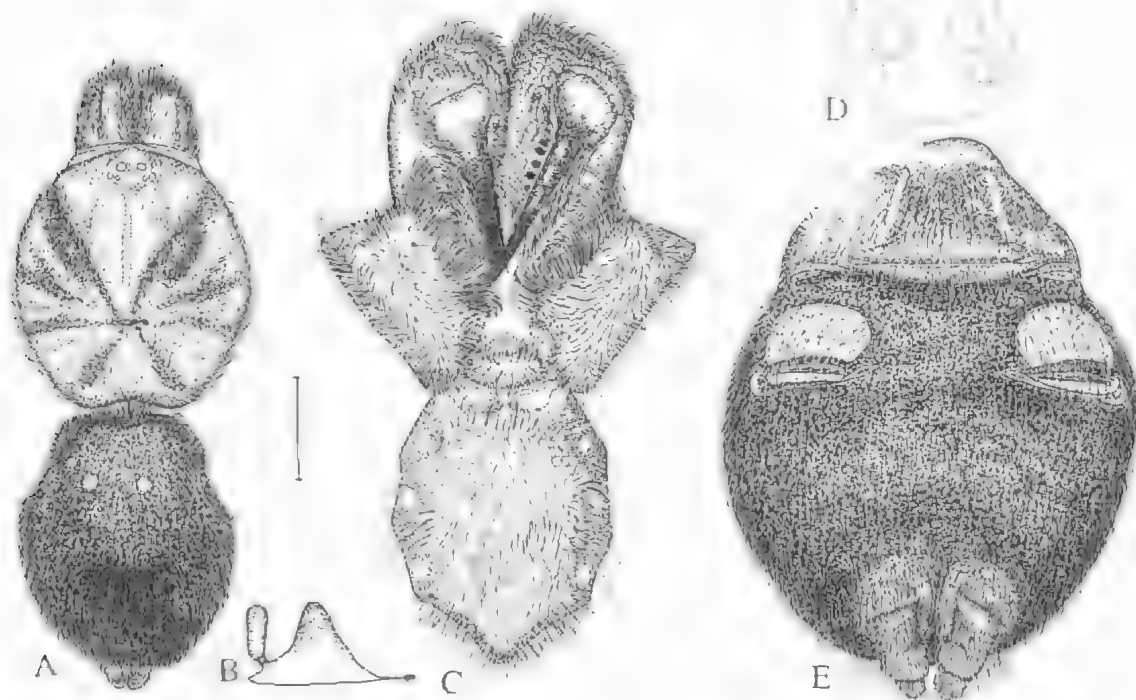


FIG. 227 *Nihou maior* (Kutozynski), holotype ♀ (NHMH). A, carapace, chelicerae & abdomen, dorsal view; B, spermathecae; C, sternum, maxillae, labium & chelicerae, ventral view; D, eyes, dorsal view; E, abdomen, ventral view. Scale line = 4mm (A); 2mm (C, E); 1mm (D); 0.5mm (B).

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Sattelburg (=Sattelburg, 6°29'S° 147°46'E), New Guinea, IV, 1899, L. Bird, '46/51u, Y.Z.P.A.N. Warszawa, NHMHB

#### DIAGNOSIS

Females of *N. maior*, *N. annulata*, and *N. annulipes* differ from those of other *Nihou* in that the PMS are quite large, being 0.70 or more as long as the basal segment of the posterior lateral spinnerets. *N. maior* differs from both *N. annulata* and *N. annulipes* in the legs lacking darker annulations and the abdomen lacking pattern, and also in that patellae I-III are longer than tibiae of the same legs.

PMS well developed. Abdomen black without pattern; legs lightly annulated. Rastellum absent. Labium with c.2 cuspules; maxillae with c.17 cuspules. FEMALES. Basifemoral thorns weak to absent; preening combs present. Scopula present on metatarsi III, IV. Spermathecae a single triangular mound on each side. MALES. Unknown.

#### DESCRIPTION

##### HOLOTYPE FEMALE NHMH

Carapace 11.17 long, 9.83 wide. Abdomen 10.50 long, 8.83 wide. Total length, 26.

**Colour.** Carapace, chelicerae, and legs orange brown; abdomen black without any mottling but with pair of round sigilla. Legs with light brown annulations proximally on tibiae and metatarsi III, IV and distally on metatarsi III, IV.

**Carapace.** Covered with fine brown hairs not obscuring cuticle. Fovea broad, distinctly procurved. Striae distinct, hirsute. Lateral margins lightly hirsute. Narrow band of small setal bases anteromedially. Line of 2-4 and few smaller black bristles along edge of posterior striae and along posterior edge of anterior-most striae. Cluster of 8-10 thick bristles between ALE. Some setal scars in median ocular quadrangle. One pair of foveal bristles.

**Eyes.** Tubercle distinct. Eye group occupies 0.29 of head-width; front:back:long, 74:94:61. AME:ALE:PME:PLE, 23:22:14:18. MOQ front:back:long, 60:68:37. Back row procurved. Eye interspaces: AME-AME, 0.7; AME-ALE,

0.8; ALE-ALE, 1.9; ALE-PLE, 1.2; PME-PLE, 0.1; PME-PME, 1.8.

**Chelicerae.** Short fine brown bristles prodorsally; shorter band laterally. Rastellum absent. Promargin with 10 large and 3 small teeth; basomesally with 10-15 small pointed teeth.

**Labium.** 0.75 long, 1.75 wide; with 2 small cuspules. Labiosternal suture consists of two broad contiguous sigilla. Margins wide, glabrous. 3 thick setae behind medial ridge of labium, many thick setae anteriorly, 15-20 fine setae along posterior margin.

**Maxillae.** 3.00 long in front, 4.08 long behind, 1.83 wide; with 16-18 cuspules along inner edge. Heel slightly produced, angular; anterior lobe indistinct. No groove or lyra on anterior face.

**Sternum.** 5.92 long, 4.58 wide. Sigilla: margins glabrous anterior of posterior most sigilla; posterior pair length c.14% of sternal width, submarginal, others c.10%, marginal, all distinct.

**Legs.** All leg tarsi distally incrassate, truncate. Basifemoral thorns evident only as few shorter setae on IV. Thorn spines absent. Preening combs: III, 1 of 2; IV, 1 of 2, all retroventral.

	I	II	III	IV	Palp
Femur	6.00	5.58	5.25	7.58	4.92
Patella	4.75	4.33	3.67	4.33	3.50
Tibia	4.25	3.92	3.33	5.67	3.17
Metatarsus	3.42	3.17	4.00	6.33	-
Tarsus	1.75	1.67	1.58	1.83	2.42
Total	20.17	18.67	17.83	25.74	14.01

**Scopula.** On lower 200° of tarsi; continuous with tufts. Metatarsi: I, II, entire, full; entire; III, divided, thick, in distal 1/3; IV, divided, thin, in distal 1/6. Tarsi: I-III, entire, full; IV, narrowly divided.

**Spines.** I: fe p1, pa 0, ti p1 v1, me 0. II: fe p1, pa 0, ti p2 v1, me 0. III: fe p1 r1, pa p1 r1, ti p2 r3 v5, me p4 r2 v5. IV: fe r1, pa r1, ti p2 r3 v5, me p3 r3 v7. Palp: fe p1, pa 0, ti p3 v5, ta 0.

**Trichobothria.** Tibiae with 10-15 for half length; metatarsi with c.10-15 filiform in strongly and quickly curving row, on retrolateral face for proximal 5/6; tarsi with 10-20 filiform and 10 clavate.

**Claws.** Project above tufts, with 2 small teeth (I) or bare (IV); palpal claw bare and much smaller than tufts and claws of I. Claw tufts broad. All leg claws similar.

**Spinnerets.** PMS 1.08 long, 0.33 wide, 0.25 apart, 0.28 of PLS in diameter. Basal, middle, apical, and total articles of PLS 1.50, 0.42, 0.08, 2.08 long, respectively.

**Spermathecae.** A single triangular mound with slender ectal lobe of similar length on each side.

#### DISTRIBUTION

Sattelburg, PNG.

#### *Nihoa mambulu* sp. nov.

(Figs 71, 228, Table 17)

#### MATERIAL EXAMINED

TYPE. Holotype ♂, Solomon Islands, Guadalcanal Is, Mt Austen (Mambulu), S of Honiara, rainforest, 360m, 9°28'S 159°59'E, Jan 1966, P. Greenslade, BMNH.

#### DIAGNOSIS

Differs from *N. pictipes* and most other species in lacking a tibial microspur in ♂♂, teeth on the claws of leg IV of ♂♂, and also leg annulations.

PMS well-developed. Abdomen dorsally and ventrally mottled. Labium lacks cuspules; maxillae with c.3 cuspules. FEMALES. Unknown. MALES. Tibia I with short conical proventral spur bearing megaspine; microspur absent, upper megaspine short, curved. Palpal bulb pyriform with gradual taper to embolus; distally 3 keels twist to embolic tip. Claws on I with teeth only on medial keel, on IV bare.

#### ETYMOLOGY

From the native name of the type locality.

#### DESCRIPTION

##### HOLOTYPE MALE BMNH

Carapace 7.75 long, 6.69 wide. Abdomen 7.13 long, 4.69 wide. Total length, 17.

**Colour.** Carapace and chelicerae dark reddish brown, and legs orange brown, not annulated. Abdomen dorsally brown with small pallid areas in posterior half, medially and laterally which form narrow brown chevrons; ventrally mottled brown with irregular pallid areas medially.

**Carapace.** Pilosity: uniform cover of long golden hairs and black bristles; striae narrow, indistinct. Bristles: line of short black beside posterior striae; anteromedial group only as thick as elsewhere; 6 long thick and few finer between PME, and c.10 long thick curved between ALE; short strong black on lateral margins; sclerotised hirsute shelf below carapace. Fovea procurved, short, with recurved ends.

**Eyes.** Tubercle distinct. Group occupies 0.32 of head-width; front width, back width, length, 48, 61, 43, respectively. Back row procurved; first and second rows very close. MOQ front width, back width, length, 39, 43, 26, respectively. AME:ALE:PME:PLE, 11:17:10:15. Eye interspaces: AME-AME, 0.6; AME-ALE, 0.8; ALE-PLE, 1.8; PME-PME, 2.5; PME-PLE, 0; ALE-ALE, 1.6.

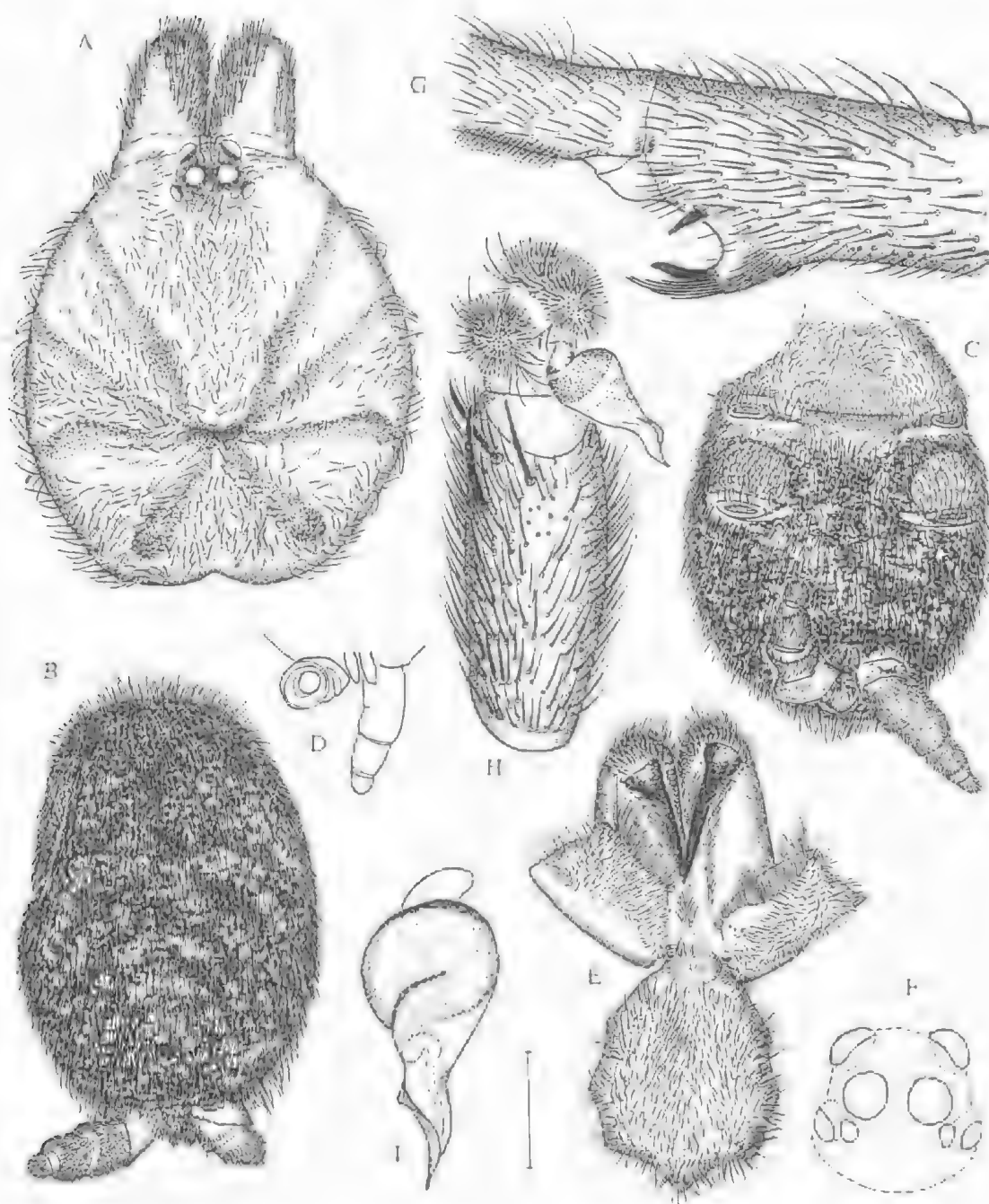


FIG. 228. *Nilhoa mambulu* sp. nov., holotype ♂ (BMNH). A, carapace & chelicerae, dorsal view; B, C, abdomen, dorsal (B), ventral view (C); D, spinnerets, ventral view; E, chelicerae, sternum, maxillae & labium, ventral view; F, eye group, dorsal view; G, tibia & metatarsus I, retrolateral view; H, cymbium & palpal bulb, ventral view; I, palpal bulb, ventral view. Scale line = 2mm (A-E); 1mm (F-H); 0.5mm (I).

**Chelicerae.** Broad band of long brown hairs — glabrous zone adjacent to hirsute vertical face, and bristles prodorsally, laterally a narrow — Rostellum absent. Furrow promargin with 9

moderately large mixed with 3 smaller teeth basomesally with 2 small teeth on one outer margin at c. midlength of furrow, other margin bare.

**Labium.** 0.52 long, 1.20 wide; setation strong in median triangle and finer setae along back edge. Labiosternal suture a narrow groove of two sigilla.

**Maxillae.** 2.08 long in front, 2.64 long behind, 1.20 wide; 3 blunt cuspules in inner angle. Heel produced, narrow; anterior lobe distinct, angular.

**Sternum.** 4.12 long, 3.44 wide; margins hirsute. Sigilla all small, indistinct, oval, marginal.

	I	II	III	IV	Palp
Femur	5.81	5.69	5.25	6.75	3.81
Patella	3.50	3.56	2.94	3.38	2.31
Tibia	4.56	4.50	3.88	5.81	2.38
Metatarsus	3.56	3.75	3.88	5.94	1.7
Tarsus	1.69	1.81	1.31	1.75	1.44
Total	19.12	19.31	17.26	23.63	9.94

**Legs.** Tibia I with short conical proventral spur bearing megaspine; microspur absent, upper megaspine, short, curved. Ventral tarsi (scopulate area) I-IV pallid, flattened, incrassate; distal third of metatarsi I, II, also pallid, incrassate. Thorn spines and preening combs absent.

**Scopula.** All scopula hairs short. Metatarsi: I, II, full, dense in distal 1/2, thin elsewhere, entire; III, two narrow sparse triangles in distal 1/4; IV, absent. Tarsi: I, II, full, short, dense, entire; III, dense, full, divided by setal band 2-3 wide; IV, like III but setal band 3-5 wide.

**Spines.** I: fe p1, pa v1, ti v2 +2 megaspines, me v1. II: fe p4 (3w), d4w, r1w, pa 0, ti p2, v5, me v1. III: fe p4w, d3w, r3w, pa p2, ti p2, r2, v8, me p3, r1, v6. IV: fe p1w, d3w, r2w, pa 0, ti p1, r2, v9, me p2, r2, v8. Palp: fe 0, pa 0, ti p1, v4.

**Claws.** 1-2 teeth in medial keel (I) or bare (IV).

**Trichobothria.** Two rows, each of c.9 for half length of tibiae; c.10 on metatarsi in curving row; c.7 clavate and c.13 filiform on tarsi. Tarsal organ a distinct distal mound.

**Palp.** Bulb pyriform with gradual taper to embolus; distally 3 keels twist to embolic tip; cymbium dimorphic, both faces convex.

**Abdomen.** Shallow transverse invagination ental of and beside each posterior booklung aperture; the invaginations one third the length of a booklung aperture and ending blindly.

**Spinnerets.** PMS 0.63 long, 0.22 wide, 0.13 apart, and c.0.33 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.20, 0.63, 0.25, 2.08 long, respectively.

#### DISTRIBUTION & HABITAT

Mt Austen, Guadalcanal, Solomon Islands. When collected, the area was rainforest. The col-

lectors now report the mountain has been cleared for agriculture. The sustained widespread presence of *Seqocrypta jakara* in Brisbane's suburbs suggest that *N. mambulu* may still be extant.

#### *Nihoa pictipes* (Pocock, 1902) (Figs 71, 209, 229, 230, Table 18)

*Encyocrypta pictipes* Pocock, 1902, p. 100, T. 11, fig. 17.

*Idiomniata pictipes* (Pocock, 1902); Roewer, 1942, p. 2151; Bonnet, 1957, p. 2288.

#### MATERIAL EXAMINED

TYPE. Holotype ♀, 'New Britain', [6°00'S 150°00'E] BMNH 98.12.5.10, A. Willey, BMNH, examined.

OTHER MATERIAL EXAMINED. ♂, PNG, New Ireland Province, New Ireland, taken at sea level, 1 km S. Bakan, Kono House, 3°32'30"S 152°21'30"E, 22 Jul 1979, J. Dale-Smith, AMNH. 4 ♀♀ 1 juv, 'Ralum' [=Vunamani, Cayley-Webster, 1898], New Britain, 23 Jan 1897, ZMB 29826; ♀, Ralum, New Britain, 2 Feb 1897, with sac of c.30 eggs and bark of tree with nest, ZMB 29825; ♀, Mt Javae, at 300m, S, New Georgia, Solomon Is., 26 Jun 1990, TBC, QMS19125; 1 ♀, same data, QMS19062; 3 ♀♀, Uepi I, on trees in moss over beach, Morovo Lagoon, Solomon Is., 8°27'S 157°56'E, 1 Jul 1990, TBC, QMS17854; 1 ♀, same data, but 4 Jul 1990, QMS19126; 2 juv, Bulolo, Moresby District, 18 Aug 1970, B. Gray, under bark of *Araucaria cunninghami*, AMKS13214; 1 juv, same data but 2 May 1970, AMKS13009.

#### DIAGNOSIS

Differs from *N. annulipes* in the smaller size, and in lacking both scopula on tarsi IV and a rastellum and from *N. gressitti* in lacking a microspur and associated megaspine.

PMS well developed, Rastellum absent. Labium lacks cuspules, maxillae with c.16. Abdomen with distinct pattern; carapace boldly marked; legs strongly annulated. MALES. Two rows of teeth on claws of legs I, II, one row on III, IV; tibia I with laterally directed ventral spur; microspur and associated megaspine absent. FEMALES. Basifemoral thorns absent; preening combs present. Female palpal claw about half size of tufts. Scopula absent on metatarsi III, IV. Spermathecae two, each a triangular mound with small ectal antennate lobe.

#### DESCRIPTION

##### MALE AMNH

Carapace 4.38 long, 3.88 wide. Abdomen 4.50 long, 3.81 wide. Total length, 10.

**Colour.** Carapace dark orange brown with darker brown areas on caput radiating from fovea

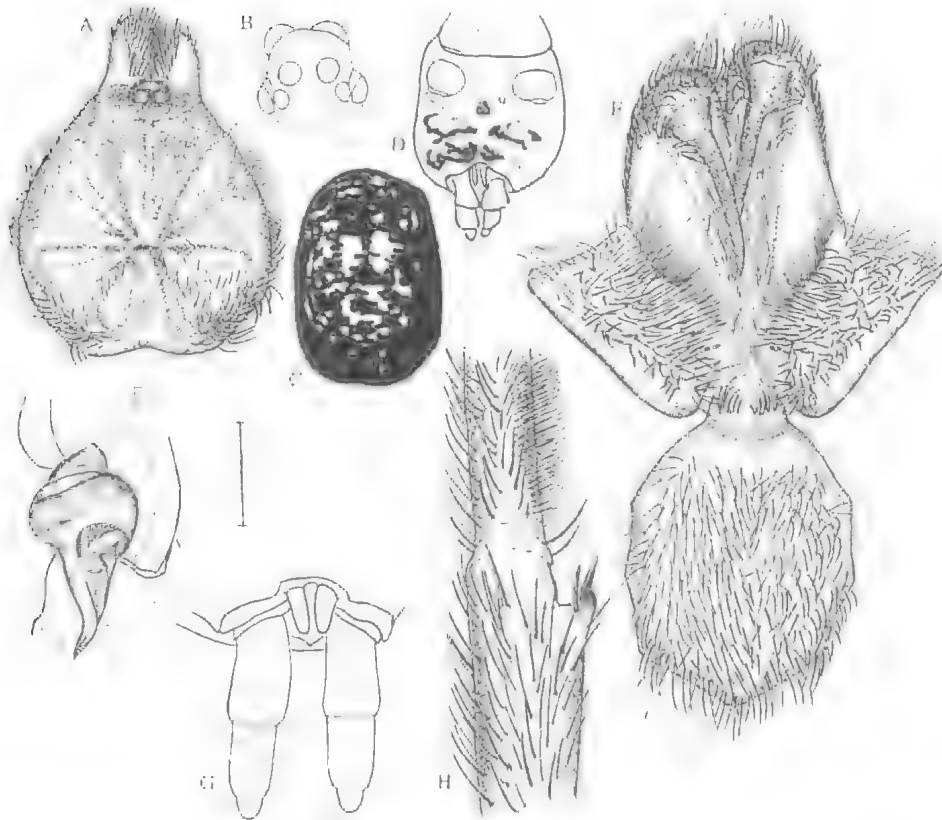


FIG. 229. *Nihoa pictipes* (Pocock), ♂ AMNH. A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, D, abdomen, dorsal (C), ventral (D); E, sternum, maxillae & labium, ventral view; G, spinnerets, ventral view; H, tibia & metatarsus I, ventral view; F, palpal bulb, ventral view. Scale line = 2mm (A, C, D); 1mm (E, H); 0.5mm (B, F, G).

along striae, chelicerae red brown, legs orange brown, brown annulations on distal femora and patellae, proximal and distal on tibiae and metatarsi, and proximal on tarsi. Abdomen dorsally brown and white maculate, ventrally pallid with brown areas also laterally near spinnerets.

**Carapace.** Erect bristles on interstrial ridges; line of median bristles, and long silvery hairs; 4-6 bristles between AME; 2-6 in front of ALE; c.5 between PME. Caput slopes down to edge. Fovea short, straight.

**Eyes.** Group occupies 0.41 of head-width; front width, back width, length, 30:38:34. Back row slightly procurved. MOQ front width, back width, length, 28:27:18. AME:ALE:PME:PLE, 10:11:7:11. Eye interspaces: AME-AME, 0.4; AME-ALE, 1.0; ALE-ALE, 1.0; PME-PLE, 0; PME-PME, 1.5; ALE-PLE, 1.1.

**Chelicerae.** Small, rounded, with curved bristles on dorsal and lateral face. Rastellum ab-

sent, weak intercheliceral bristles. Fang long, slender. Furrow promargin with 9 teeth, basomesally without teeth or granules. Intercheliceral tumescence absent.

**Labium.** 0.80 wide, 0.28 long. Labiosternal suture shallow, glabrous, with two sigilloid areas. Setae in triangular area extending posteriorly for 3/4 of length.

**Maxillae.** 1.20 long in front, 1.52 long behind, 0.72 wide; with c.15-17 cuspules. Heel rounded with concave inner edge; anterior lobe short, indistinct.

**Sternum.** 2.32 long, 2.04 wide. Sigilla small, rounded, marginal. Lateral setae noticeable.

	I	II	III	IV	Palp
Femur	4.13	3.81	3.44	4.81	2.40
Patella	2.44	2.19	1.88	2.19	1.56
Tibia	3.19	2.81	2.63	3.69	1.68
Metatarsus	2.50	2.50	2.75	4.25	-
Tarsus	1.44	1.50	1.38	1.63	1.28
Total	13.70	12.81	12.08	16.67	6.92

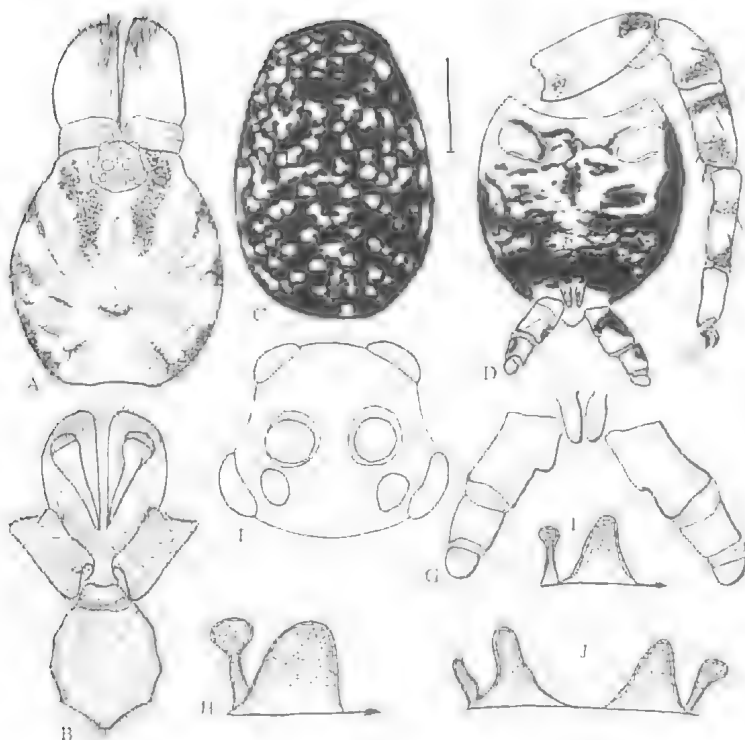


FIG. 230.

*Nihoa pictipes* (Pocock) ♀. A-H, ZMB 29825; I, holotype ♀ BMNH; J, QMS17854, Marovo Lagoon. A, carapace & chelicerae, dorsal view; B, sternum, maxillae, labium & chelicerae, ventral view; C, D, abdomen, dorsal (C), ventral view (D); E, leg III showing annulations, pro-lateral view; F, eyes, dorsal view; G, spinnerets, ventral view; H-J, spermathecae, H, ZMB 29825; I, holotype ♀ BMNH; J, QMS17854, Marovo Lagoon. Scale line = 1mm (G); 2mm (A-E); 0.5mm (F); 0.25 (H-J).

**Palp.** Bulb pyriform, embolus with single keel. Cymbium aspinose, slightly dissimilar lobes. Tibia with slight distoventral groove.

**Spinnerets.** PMS 0.38 long, 0.13 wide, 0.08 apart, c.0.28 of basal PLS in

diameter. Basal, middle, apical, and total articles of PLS, 0.65, 0.38, 0.20, 1.23 long, respectively. Apical segment domed.

#### FEMALE ZMB 29825

Carapace 5.50 long, 4.44 wide. Abdomen 5.94 long, 4.25 wide. Total length, 13.

**Colour.** Carapace orange brown with brown marking along edges and on caput, chelicerae orange brown, legs orange brown strikingly marked with distinct brown annulations distally on femora, proximally and distally on tibiae and metatarsi and a brown patch distally on pro- and retrolateral faces of patellae; annulations less distinct on femora and patella of palp and legs I, II. Abdomen dorsally mottled with white spots forming no evident pattern; ventrally mostly brown with irregular white areas centrally and just anterior to spinnerets.

**Carapace.** Pilosity: light uniform cover of fine brown hairs; striae broad, indistinct. Bristles: 3-4 erect brown beside posterior striae; 6 anteromedially and few in band beside caput; 8 long thick and 8-10 finer between PME, and 4 long thick and 10-15 finer between ALE; short brown bristles on lateral margins. Fovea deep, clearly procurved.

**Legs.** Tibia I with laterally directed ventral spur bearing megaspine. Thorn spines absent. Preening combs: 2 close 3 retro comb on III, 3 setae retro on IV. All tarsi ventrally pallid; tarsi II and to a lesser extent III ventrally concave, presumably collapsed.

**Scapula.** Never obscures cuticle. Metatarsi: I, thin, divided by 1 line of setae, in distal 4/5; II, like I, less denser; III, almost absent, distal 1/5 thin, scattered; IV, absent. Tarsi: I, II, moderately dense, full, divided by one line of setae; III, divided by 1 line of setae; IV, narrowly divided by 2-3 setal rows.

**Spines.** I: fe p1, pa 0, ti v3 + spur, me 0. II: fe p1, pa 0, ti p1, v3w, me 0. III: fe p1, d1, r2, pa p2, r1, ti p2, r1, v5w, me p2, r2, v3. IV: fe d1, r1, pa 0, ti r2, v6, me p3, r3, v5. Palp: fe 0, pa 0, ti v4.

**Claws.** All similar size. 2 rows of 4 teeth arising high on claw and parallel to one another, not scooped (I, II); teeth only on outer faces (III); or 1 short and 1 long tooth medially (IV). Claw tufts dense almost as high as claw.

**Trichobothria.** Two full rows, each of 8-10 on tibiae; 10-15 in full row on metatarsi; 3 small clavates proximally, 8-10 filiform in each of 3 bands on tarsi in two bands divided by setae.



**Eyes.** Tubercle distinct. Group occupies 0.33 of head-width; front width, back width, length, 58, 76, 60, respectively. MOQ front width, back width, length, 48, 52, 33, respectively. AME:ALE:PME:PLE, 20:22:13:22. Eye interspaces: AME-AME, 0.6; AME-ALE, 0.8; ALE-PLE, 1.1; PME-PME, 1.5; PME-PLE, 0.1; ALE-ALE, 1.1.

**Chelicerae.** Narrow sparse band of few long and many shorter brown bristles prodorsally, laterally no bands but area lightly setose. Rastellum and mound absent. Furrow promargin with 10 large close mixed with 2 small teeth, basomesally with 5 small and 10-15 fine teeth reaching to c.0.4 of furrow basally.

**Labium.** 0.50 long, 1.06 wide. Labiosternal suture a narrow glabrous slightly raised mound; c.10 thick bristles behind central mound and many finer behind that.

**Maxillae.** 1.56 long in front, 2.22 long behind, 0.94 wide; with 11 blunt cuspules in inner angle, not on mound. Heel slightly produced, rounded; anterior lobe small.

**Sternum.** 2.81 long, 2.50 wide; strong setae along posterior margins. Sigilla all small, subcircular, marginal.

**Legs.** Basifemoral thorns and thorn spines absent. Preening combs: I of 3 strong setae on retroventral III, IV.

	I	II	III	IV	Palp
Femur	3.38	3.00	2.63	4.06	2.69
Patella	2.44	2.06	1.75	2.13	1.75
Tibia	2.31	2.19	1.88	3.13	1.56
Metatarsus	1.75	1.69	1.88	3.50	-
Tarsus	1.19	1.13	0.94	1.25	1.56
Total	11.07	10.07	9.08	14.07	7.56

**Scopula.** Metatarsi: I, II, full, dense, entire; III, IV, absent save for two narrow clusters of hair distally. Tarsi: I, II, full, dense, entire; III, dense, divided by narrow setal band 2-4 wide; IV, divided by narrow setal band 6-8 wide, some long but many short setae.

**Spines.** I: fe p1, d4w, pa 0, ti v2w, me 0. II: fe p1, d3w, pa 0, ti p1, v2w, me v1. III: fe p1, d1w, r2w, pa p3, ti p1, r2, v6, me p3, r2, v9. IV: fe d1w, r1, pa r1, ti r3, v11, me p3, r3, v8. Palp: fe p1, pa 0, ti p1, v8.

**Claws.** 1-2 (I) to 1 (IV) small teeth medially; palpal claw c.half size of tufts, bare; all claws of similar size.

**Trichobothria.** Two rows, each of 8 for half length of tibiae; c.14 on metatarsi in short curving band including distal rod cluster of c.9 on prolateral face distally and c.5 on retrolateral face proximally; c.4 large clavate proximally and c.10-15 filiform in two groups distally on tarsi.

**Spermathecae.** Two, each a triangular mound with small ectal antennate lobe.

**Spinnerets.** PMS 0.47 long, 0.20 wide, 0.13 apart, and c.0.35 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.02, 0.47, 0.31, 1.80 long, respectively.

#### DISTRIBUTION

The type-locality, New Britain, and a number of islands in the northwestern Pacific including the New Georgia (Solomon Islands), New Ireland and the Moresby District (PNG).

#### REMARKS

The ♀ described and figured here is in far better condition than the holotype (also examined) and differed in very minor aspects. This is the first description of the ♂.

**Nihoaleighi** sp. nov.  
(Figs 209, 231, Table 17)

#### MATERIAL EXAMINED

YPES. Holotype ♂, PNG, Western Province, Oriomo village, [8°50'S 143°15'E], abandoned cultivated plot, pitfall, 16 May 1986, D. Jones (Operation Raleigh), QMS17811; ♂ paratype, same data, QMS17812.

#### DIAGNOSIS

Differs from all other *Nihoaleighi* species known from New Guinea in lacking PMS. The combination of no PMS absent and no upper megaspine on ♂ tibia I readily distinguishes this species from all other known *Nihoaleighi*.

PMS absent. Abdomen dorsally and ventrally mottled; legs not annulated. Labium lacks cuspules; maxillae with c.23 cuspules. Rastellum weak. MALES. Fovea procurved. Scopulate ventral surface of tarsi I, II pallid and swollen for distal two-thirds making scopulate surface area less curved and greater; tarsi III, IV not enlarged. Two rows of teeth on claws of leg I, teeth only on outer edges of leg IV. Tibia I on proventral corner with small distal spur with long sinuous megaspine; upper megaspine and process absent; palpal bulb pyriform, tapering to embolus for 5/6 its length twisting once to short pointed embolus. FEMALES. Unknown.

#### ETYMOLOGY

For Sir Walter Raleigh, whose name was adopted for the world-wide sailing expedition.



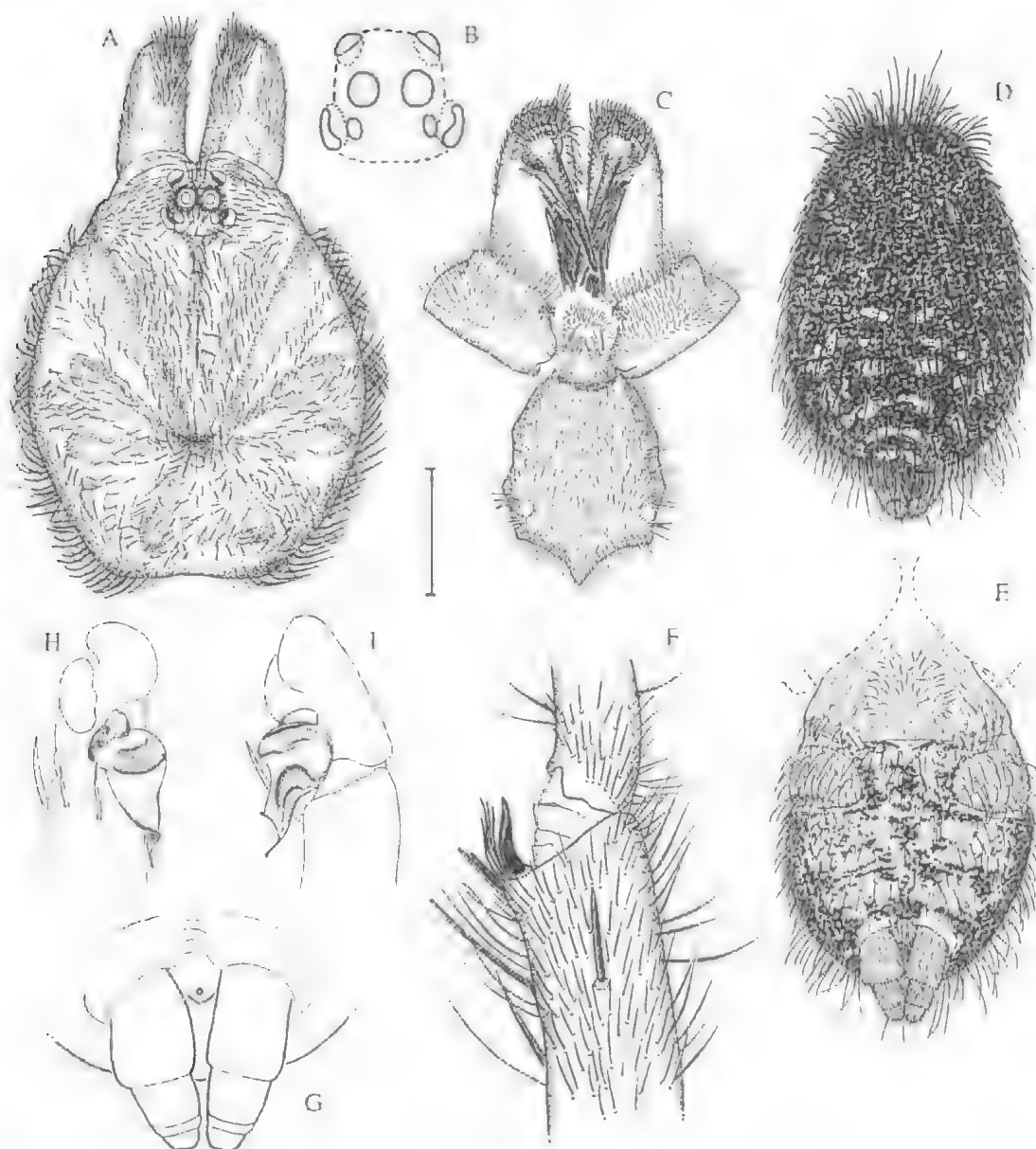


FIG. 231. *Niloua ruleighi* sp. nov., holotype ♂ (QMS17811). A, carapace & chelicerae, dorsal view; B, eye group, dorsal view; C, chelicerae, sternum, maxillae & labium, ventral view; D, E, abdomen, dorsal (D), ventral view (E); F, tibia & metatarsus I, retrolateral view; G, spinnerets, ventral view; H-I, palpal bulb, prolateral (H), retrolateral view (I). Scale line = 2mm (A, C-E); 1mm (B, F, H, I); 0.5mm (G).

#### DESCRIPTION

##### MALE HOLOTYPE QMS17811

Carapace 5.36 long, 6.64 wide. Abdomen 6.16 long, 3.92 wide. Total length, 16.

**Colour.** Carapace and legs dark reddish brown, chelicerae orange brown. Abdomen dorsally

brown, very hirsute, with 3 narrow paired pale areas posteriorly; ventrally pallid with irregular areas of brown flecking. Legs not annulated.

**Carapace. Pilosity:** uniform light cover of fine gray wavy hairs giving silver sheen, hairs longer on margins. Bristles: many black form reticulat-

ing lines on interstitial ridges; long thick black on margins; 3-4 paired in front of fovea; 10-12 thick anteromedially; c.8 thick between PME, and 6 thick between ALE; 4-6 thick beside posterior striae. Fovea distinctly procurved. Striae, save for anterior pair, hirsute, indistinct, narrow. Hirsute cuticular shelf extends below carapace above all leg coxae.

**Eyes.** Tubercle distinct. Group occupies 0.33 of head-width; front width, back width, length, 40:38:45. Back row procurved. MOQ front width, back width, length, 31:41:27. AME:ALE:PME:PLE, 13:13:9:16. Eye interspaces: AME-AME, 0.6; AME-ALE, 0.9; ALE-ALE, 1.7; PME-PLE, 0.4; PME-PME, 0.2; ALE-PLE, 1.7.

**Chelicerae.** Slender, with prodorsal band of dense, short, close-cropped bristles, lateral band narrow hirsute. Rastellum absent, save for line of long straight stiff bristles on margin of fang joint and just above it. Furrow promargin with 3 large and 6 smaller teeth, basomesally with c.8 very small indistinct granules. Intercheliceral tumescence and other modifications absent.

**Labium.** 0.88 wide, 0.48 long. Labiosternal suture a broad groove of two sigilla joined medially. Setae uniform cover of weak setae, thick setae on front edge.

**Maxillae.** 1.68 long in front, 2.40 long behind, 0.88 wide; with c.20-25 blunt spaced cuspsules in inner angle, not on mound. Heel produced, rounded; anterior lobe, distinct. Lyra and prolateral groove absent.

**Sternum.** 3.28 long, 2.56 wide. Sigilla distinct, oval, marginal; posterior pair c.11% of sternal width. Margins hirsute.

**Legs.** Tibia I on proventral corner with small distal spur with long sinuous megaspine; cuticle dorsal to spur pallid, upper megaspine and microspur absent. Scopulate ventral surface of tarsi I, II pallid and swollen for distal two-thirds making scopulate surface area less curved and giving greater contact area; tarsi III, IV not enlarged. General pilosity: black bristles and light cover of fine black hairs. Thorn spines absent. Preening combs: 1 each of 2-3 setae on retroventral III, IV.

	I	II	III	IV	Palp
Femur	4.72	4.64	4.56	6.25	4.02
Patella	4.02	2.80	2.62	3.06	1.76
Tibia	3.68	4.02	2.93	4.87	2.48
Metatarsus	3.04	2.88	3.87	6.18	-
Tarsus	1.76	2.24	1.56	2.12	1.36
Total	17.22	16.58	15.54	22.48	9.62

**Scopula.** Metatarsi: I, II, very thin to sparse, only in distal 1/2, and mixed with bristles; III, few

hairs in two very small distal clusters; IV, absent. Tarsi: I, II, short, not obscuring cuticle, also see above, with c.6 curved setae medially for c.1/5 from distal; III, thin, full, divided by band of short, thin, low set bristles 4-6 wide and 2 long erect curved bristles; bases of all bristles enlarged more so than those of setae; IV, even thinner, scopula band narrower than bristle band.

**Spines.** I: fe p1, d5, pa 0, ti p1, v5 + megaspine, me p1, v2. II: fe p1, d3, pa 0, ti p2, v5, me v1. III: fe p1, d3, r1, pa p3, ti p2, r3, v7, me p4, r5, v5. IV: fe d5, r3, pa 0, ti p2, r3, v10, me p4, r4, v9. Palp: fe p1, d3, pa 0, ti p1, v4.

**Claws.** 2-4 teeth in each of two rows (I); inner rows distal with 2 teeth, outer rows basal with 4, 2 small teeth on outer edges (IV). All evident above tufts.

**Trichobothria.** Two rows, each of c.10 for full length of tibiae; c.10 in curving row on metatarsi; none clavate, c.30 filiform on tarsi.

**Pulp.** Bulb pyriform, tapering gradually to embolus for 5/6 its length where it flattens twisting as a distinct keel to short pointed embolus. Retrolateral face of cymbium concave; cymbial lobes dimorphic, truncate, prolateral lobe smaller.

**Spinnerets.** PMS absent. Basal, middle, apical, and total articles of PLS, 0.84, 0.40, 0.28, 1.52 long, respectively.

#### DISTRIBUTION

Oriomo Village, Western Province, PNG.

#### REMARKS

This is the only *Nihoa* known that lacks PMS.

*Nihoa tatei* sp. nov.  
(Figs 209, 232, Table 17)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Mt Dayman, north slope (Camp 4), Maneau [=Owen Stanley] Range, PNG, 9°50'S 148°18'E, altitude 2230m, 17 May-19 Jun 1953, Geoffrey Tate, Archbold Expedition, AMNH.

#### DIAGNOSIS

Differs from *N. kuindi* in lacking preening combs and in having evanescent PME.

PMS well developed. Abdomen finely mottled; legs not annulated. Rastellum weak, on low indistinct mound. No cuspsules on labium, c.5 on maxillae. FEMALES. Basifemoral thorns and preening combs absent. Scopula in distal 1/3-1/4 of metatarsi I, II, absent on metatarsi III, IV. Spermathecae two, each a low triangular mound

with longer slender lateral lobe with apical expansion. MALES. Unknown.

#### ETYMOLOGY

For Geoffroy Tate.

#### DESCRIPTION

##### HOLOTYPE FEMALE AMNH

Carapace 3.84 long, 3.60 wide. Abdomen 6.40 long, 5.84 wide. Total length, 11.

**Colour.** Carapace, chelicerae, and legs orange brown without darker markings. Abdomen (pattern faded) dorsally light brown with series of 5 paired pallid diagonal bands forming broad brown chevrons; ventrally cuticle lifted, pattern not discernible.

**Carapace.** Pilosity: fine brown hairs on caput and along interstrial ridges; striae indistinct, shallow. Bristles: 2-4 fine erect black beside posterior striae; 8 thick and several fine anteromedially and beside caput; two long thick and several finer between PME, and one long thick central, 3-4 thick, anterior, and few finer between AME; lateral margins glabrous. Fovea moderately wide, distinctly procurved.

**Eyes.** Tubercle low, slope gradual, poorly defined. Group occupies 0.33 of head-width; front width, back width, length, 30, 33, 24, respectively. Back row procurved. PME very small, thin, evanescent. MOQ front width, back width, length, 20, 22, 13, respectively. AME:ALE:PME:PLE, 7:10:8:5. Eye interspaces: AME-AME, 0.7; AME-ALE, 0.9; ALE-PLE, 1.4; PME-PME, 2.0; PME-PLE, 0.1; ALE-ALE, 2.0.

**Chelicerae.** Narrow band of moderately long brown bristles prodorsally, laterally glabrous. Rastellum on low, indistinct mound; 8-12 short thick, curved tapering bristles overhand fang. Furrow promargin with 7 long thick teeth, basal two longest, laterally flattened curved; basomesally with 2 small teeth.

**Labium.** 0.35 long, 0.75 wide; 5 distinct setae in line behind transverse ridge, 3 setae behind them, several setae on leading edge. Labiosternal suture a narrow groove.

**Maxillae.** 1.00 long in front, 1.50 long behind, 0.63 wide; with 5-6 cuspules in inner angle. Heel broad; anterior lobe indistinct.

**Sternum.** 2.08 long, 1.80 wide. Sigilla all small, marginal, oval.

**Legs.** Thorn spines, basifemoral thorns, and preening combs absent.

**Scopula.** Metatarsi: I, II, very thin, in distal 1/3-1/4, prolateral, divided by setae; III, IV, en-



FIG. 232. *Nihoa latei* sp. nov., holotype ♀ (AMNH). A, carapace & chelicerae, dorsal view; B, chelicerae, sternum, maxillae & labium, ventral view; C, abdomen, dorsal view; D, eye group, dorsal view; E, spinnerets, ventral view; F, spermathecae. Scale line = 1mm (A, B); 2mm (C); 0.5mm (D, E); 0.24mm (F).

tirely absent. Tarsi: I, II, hairs short, thin but full, divided by setal band 2-4 wide; III, IV, very sparse, reduced to two narrow lateral bands of hair.

	I	II	III	IV	Palp
Femur	2.20	2.04	1.80	2.88	1.76
Patella	1.72	1.64	1.40	1.72	1.28
Tibia	1.48	1.36	1.24	2.12	1.08
Metatarsus	0.96	0.96	1.32	2.36	-
Tarsus	0.72	0.68	0.96	0.96	0.72
Total	7.08	6.68	6.36	10.04	4.84

**Spines.** I: fe 0, pa 0, ti 0, me v2 distal. II: fe 0, pa 0, ti v3w, me v2 distal. III: fe 0, pa p2, ti p2, r1, v5w, me p3, r2, v6, IV: fe 0, pa r1w, ti p2, r2, v8, me p3, r3, v8. Palp: fe 0, pa 0, ti p1w, v5.

**Claws.** 1 small tooth medially (I, III); palpal claw well developed, as high as tufts, bare.

**Trichobothria.** Two rows, each of c.9 for full length of tibiae; c.11 on metatarsi in curving row; 2 clavate and c.10 filiform on tarsi.

**Spermathecae.** Two, each a low triangular mound with longer slender lateral lobe with apical expansion.

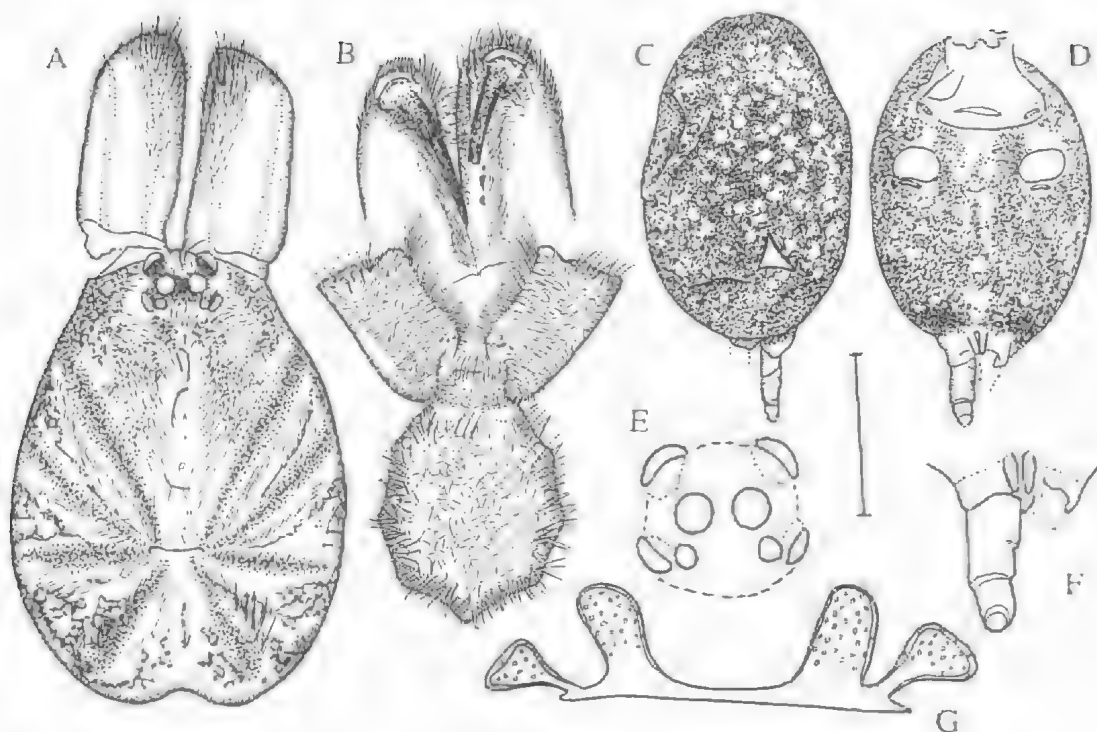


FIG. 233. *Nihoa vanuatu* sp. nov., holotype ♀ (BMNH). A, carapace & chelicerae, dorsal view; B, chelicerae, sternum, maxillae & labium, ventral view; C, D, abdomen, dorsal view (C), ventral view (D); E, eye group, dorsal view; F, spinnerets, ventral view; G, spermathecae. Scale line = 2mm (A, B, F), 4mm (C, D), 1mm (E); 0.5mm (G).

**Spinnerets.** PMS 0.28 long, 0.08 wide, 0.05 apart, and c.0.20 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 0.50, 0.13, 0.08, 0.71 long, respectively.

#### DISTRIBUTION & HABITAT

Mt Dayman, presumably rainforest, on the Owen Stanley Range, PNG.

*Nihoa vanuatu* sp. nov.  
(Figs 71, 233, Table 17)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, 'New Hebrides' [16°00'S 167°00'E], 1929-1931, Miss. L. Cheesman, BMNH 1933.3.15.27-28.

#### DIAGNOSIS

Females differ from those of *N. pictipes* in lacking annulations on legs and basifemoral thorns, and having small PMS (less than 0.7).

PMS well developed. Abdomen finely mottled; legs not banded. No cuspules on labium, c.6 on maxillae. Rastellum weak. FEMALES. Basifemoral thorns absent; preening combs

present; 2 conical thorn spines on patella III. Scopula absent on metatarsi III, IV. Spermathecae two, each a narrow elongate mesal lobe with slender lateral lobe. MALES. Unknown.

#### DESCRIPTION

HOLOTYPE FEMALE BMNH 1933.3.15.27.

Carapace 5.94 long, 4.75 wide. Abdomen 7.56 long, 5.63 wide. Total length, 16.

**Colour.** Carapace orange brown with brown markings on caput and reticulated pattern laterally from margins along interstrial ridges, chelicerae orange brown, and legs orange brown, not annulated. Abdomen (colour faded) dorsally light brown with many small white spots forming no discernible pattern; ventrally light brown with small medial and transverse pallid areas.

**Carapace.** Pilosity: light pile of long brown hairs on caput and along interstrial ridges; striae distinct, wide, shallow. Bristles: none beside posterior striae; 8 thick brown anteromedially and many weaker beside caput; 4 long thick and 8-10 finer between PME, and 3 long thick and 8-12 finer between ALE; light pile of short brown

hairs on lateral margins. Fovea moderately wide, slightly procurved.

**Eyes.** Tubercle distinct; first and second eye rows very close. Group subquadrate, occupies 0.40 of head-width; front width, back width, length, 40, 44, 34, respectively. Back row procurved. MOQ front width, back width, length, 28, 30, 21, respectively. AME:ALE:PME:PLE, 10:16:8:11. Eye interspaces: AME-AME, 0.6; AME-ALE, 0.9; ALE-PLE, 1.2; PME-PME, 1.6; PME-PLE, 0.1; ALE-ALE, 1.5.

**Chelicerae.** Wide band of long brown bristles prodorsally, laterally very narrow band of short hair. Rastellum weak, c.10 long thick pointed bristles overhang inner edge of fang, outer and front edge overhung by short thick bristles. Furrow promargin with 6 large intermixed with 5 smaller teeth, basomesally with 2 small and 10-12 finer teeth.

**Labium.** 0.56 long, 1.04 wide; uniform cover of fine setae; 6 thick setae on transverse ridge and several on leading edge. Labiosternal suture a continuous wide groove.

**Maxillae.** 1.60 long in front, 2.40 long behind, 1.00 wide; with c.6-7 blunt cuspules in inner angle. Heel produced; anterior lobe indistinct.

**Sternum.** 3.04 long, 2.52 wide; margins hirsute. Sigilla all small, oval, marginal.

**Legs.** Basifemoral thorns absent. 2 conical thorn spines on patella III. Preening combs: 1 distinct of 3 setae on proventral III, IV; 1 of 2-3 spaced setae retroventral on III, IV.

	I	II	III	IV	Palp
Femur	3.72	3.28	2.88	4.52	2.88
Patella	2.56	2.48	1.92	2.48	1.92
Tibia	2.36	2.20	1.88	3.36	1.68
Metatarsus	1.80	1.76	1.88	3.48	-
Tarsus	1.24	1.20	0.96	1.32	1.68
Total	11.68	10.92	9.52	15.16	8.16

**Scopula.** Metatarsi: I, II, full, dense, entire (I) to distal 2/3 (II); III, IV, absent. Tarsi: I, II, full, dense, entire; III, full, dense, divided by narrow setal band 4-6 wide; IV, divided by narrow setal band 6-8 wide.

**Spines.** I: fe p1w, pa 0, ti 0, me v1w. II: fe p1w, pa 0, ti p2w, me v2w. III: fe p1w, dlw, rlw, pa p2, ti p3, r1, v4w, me p4, r3, v6. IV: fe 0, pa 0, ti r3, v8, me p3, r3, v9. Palp: fe p1w, pa 0, ti p2w, v5.

**Claws.** 1 (IV) to 2 (I) small teeth on medial keel; palpal claw small, c.2/3 height of tufts, bare.

**Trichobothria.** Two rows, each of c.9 for two-thirds of tibiae; c.11 on metatarsi in curving row, row curves very sharply on legs I, II, less so on III and IV; c.12 filiform on tarsi, no clavate evident.

**Spermathecae.** Two, modification of basic antennate domes, each a narrow elongate mesal lobe with slender lateral lobe.

**Spinnerets.** PMS 0.52 long, 0.2 wide, 0.13 apart, and c.0.33 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.20, 0.38, 0.20, 1.78 long, respectively.

#### DISTRIBUTION

'New Hebrides'.

#### REMARKS

This specimen was listed by Berland (1923) as '*Idiommatu meleugris*'.

**Nihoia variata** (Thorell, 1881)

(Figs 209, 234, Table 17)

*Idiommatu variata* Thorell, 1881, p. 246; Roewer, 1942, p. 215.

*Idiommatu variatum* (Thorell, 1881): Bonnet, 1957, p. 2288.

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Yule Is, 8°50'S 146°30'E, southern PNG, Roro, 1875, L.M. D'Albertis, CMG.

#### DIAGNOSIS

Females differ from those of *N. unnilipes* in fewer maxillary cuspules (9 vs. 22) and relatively smaller PMS, about half the length and one-third the diameter of the basal article of the PLS.

PMS small, distinct. Maxillae with c.9 cuspules; 1 on labium. Rastellum absent. Abdomen mottled; legs not banded. FEMALES. Basifemoral thorns absent; preening combs present. Scopula on metatarsi III, IV. Spermathecae, two, each an antennate dome. Thorn spines on patellae III. Tarsi IV medially cracked. MALES. Unknown.

#### DESCRIPTION

HOLOTYPE FEMALE CMG

Carapace 7.84 long, 6.80 wide. Abdomen 10.50 long, 9.33 wide. Total length, 22.

**Colour.** Carapace, chelicerae, and legs orange brown; dorsal abdomen with reticulate pattern; ventral abdomen primarily pallid with brown areas.

**Carapace.** Pilosity: uniformly but lightly hirsute with short, brown bristles so as not to obscure cuticle. Bristles: 2 thick foveal pairs; none between AME; 5 thick and several finer between ALE and on tubercle edge; lateral margins with

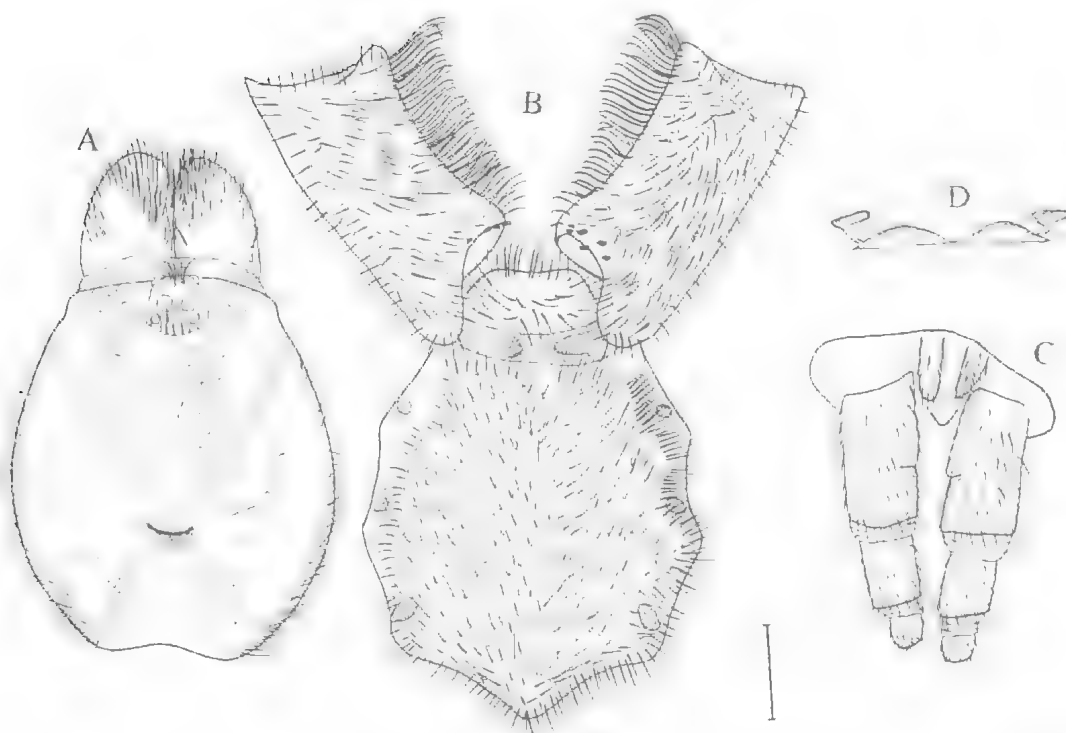


FIG. 234. *Nihoa variata* (Thorell), holotype ♀ (CMG). A, carapace & chelicerae, dorsal view; B, sternum, maxillae & labium, ventral view; C, spinnerets, ventral view; D, spermathecae. Scale line = 2mm (A); 1mm (B, C); 0.5mm (D).

fine golden brown hair; 4 thick anteromedian. Caput long, arched and distinct; fovea short, procurved; clypeus absent; striae distinct, glabrous.

**Eyes.** Tubercle distinct, raised. Group occupies 0.27 of head-width; front width, back width, length, 50:69:57. Back row slightly procurved. MOQ front width, back width, length, 41:50:32. AME: ALE:PME:PLE, 18:16:18:21. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.9; ALE-ALE, 1.4; PME-PLE, 0.2; PME-PME, 1.6; ALE-PLE 1.4.

**Chelicerae.** Sparsely clad with long and short brown bristles; rastellum absent; 7 large and 2 small teeth on promargin; 2 small teeth and 20-30 granules in basomesal group.

**Labium.** 1.68 wide, 0.72 long. Labiosternal suture deep, continuous; 1 cuspule; clad with long and short brown bristles; transverse ridge distinct.

**Maxillae.** 2.56 long in front, 3.36 behind, 1.32 wide. 9 cuspules; anterior lobe rounded; pilosity as labium; lyra absent; inner edge concave, no groove below front edge as in *Rhianodes*.

**Sternum.** 4.12 long, 3.60 wide; glabrous edges anteriorly; posterior sigilla oval, middle and anterior subcircular, marginal.

**Legs.** Inner ventral edges of coxae I, II acute. Tarsi IV medially cracked. Preening combs: 1 of 3, 4 setae on retroventral III, IV, respectively. Three short thorn spines on prolateral patellae III.

	I	II	III	IV	Palp
Femur	4.40	4.08	3.52	5.04	3.33
Patella	3.36	3.04	2.64	3.28	2.67
Tibia	3.12	2.96	2.48	4.08	2.50
Metatarsus	2.48	2.32	2.80	4.96	-
Tarsus	1.60	1.52	1.76	1.76	2.00
Total	14.96	13.92	13.20	19.12	10.50

**Scopula.** Metatarsi: I, II, full, entire; III, in distal 1/2, divided by setal band; IV, in distal 1/4, divided. Tarsi: I, II, full, entire; III, divided by thin line of c. 10 setal band; IV, divided by distinct setal band.

**Spines.** I: fe p1, d3w, pa 0, ti v2w, me v1. II: fe p1, d3w, pa 0, ti v2w, me v2. III: fe p2, d3w, r2, pa p3, r1, ti p2, r2, v7, me p4, r2, v6. IV: fe d1w, r1, pa r1, ti r3, v9, me p4, r4, v13. Palp: fe p1, pa 0, ti v8.

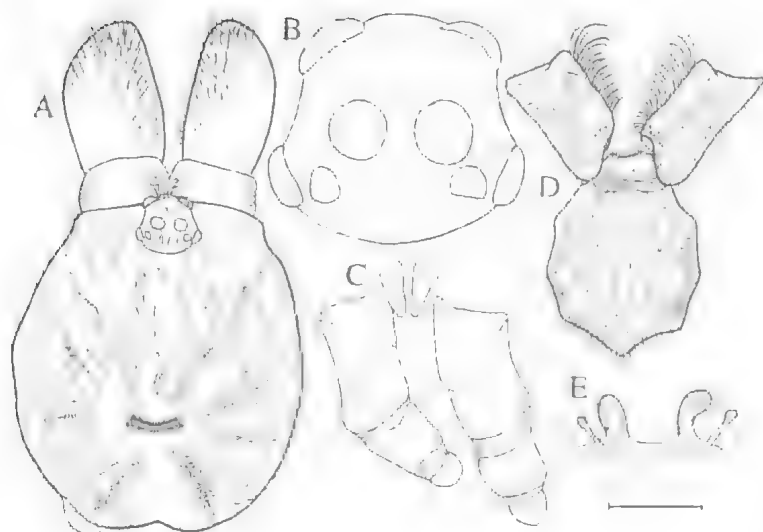


FIG. 235. *Nihoa verireti* sp. nov., holotype ♀ (QM-S8282). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, spinnerets, ventral view; D, sternum, maxillae & labium, ventral view; E, spermathecae. Scale line = 2mm (A, D); 0.5mm (B, C, E).

slender lobe with apical expansion. MALES. Unknown.

#### ETYMOLOGY

From a native name of the type locality.

**Claws.** 2 teeth (1 long, 1 short), medially on claws of legs I, claws of leg IV and palp bare.

**Trichobothria.** Two rows, each of 9 for c. half of tibiae; c. 13 on metatarsi in curving row; c. 10 filiform on tarsi, no clavates.

**Spermathecae.** Two, each an antennate dome.

**Spinnerets.** PMS 0.67 long, 0.23 wide, 0.23 apart, c. 0.33 of basal PLS in diameter. Basal, middle, apical, and total articles of PLS 1.40, 0.70, 0.28, 2.38 long, respectively. Spigots evident only on apical segment of PLS.

#### DISTRIBUTION

Yule Island, off southeastern coast of PNG.

*Nihoa verireti* sp. nov.  
(Figs 209, 235, Table 18)

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Verireti National Park, 9°26'S 147°21'E, Central Province, PNG, 2 June 1985, D.J. Court, QMS8282.

#### DIAGNOSIS

Differs from *N. pictipes* in having basifemoral thorns on I and uniformly brown abdomen ventrally, and from *N. karawari* and *N. itakara* in the shape of the eye group.

PMS well developed. Abdomen lightly mottled; legs annulated. No cuspules on labium, c. 13 on maxillae. Rastellum absent. FEMALES. Basifemoral thorns weak on I, II, IV; preening combs absent. Scopula on metatarsi III, absent on metatarsi IV. Spermathecae four, on each side a narrow thumb-like inner lobe and adjacent long

#### DESCRIPTION

##### HOLOTYPE FEMALE QMS8282.

Carapace 7.19 long, 6.09 wide. Abdomen 9.22 long, 6.56 wide. Total length, 20.

**Colour.** Carapace red brown with narrow darker areas along interstrial ridges but not on caput, chelicerae red brown, and legs orange brown with brown annulations on distal femora, patellae, tibiae, and metatarsi, and proximally on tibiae and metatarsi. Abdomen dorsally bark brown with slightly paler mottling evident; ventrally uniformly brown.

**Carapace.** Pilosity: light uniform cover of fine brown hairs and bristles forming narrow radial lines on interstrial ridges; striae indistinct, narrow. Bristles: 6-8 erect thicker black beside posterior striae; 11 anteromedially and 9-15 shorter in band beside caput; 6 long thick and few finer between PME, and 7 long thick and few fine between ALE; band of short fine hairs on lateral margins. Fovea short, distinctly procurved.

**Eyes.** Tubercle broad, distinct. Group occupies 0.27 of head-width; front width, back width, length, 43, 57, 38, respectively. MOQ front width, back width, length, 34, 40, 19, respectively. AME:ALE:PME:PLE, 13:16:6:13. Eye interspaces: AME-AME, 0.5; AME-ALE, 1.5; ALE-PLE, 1.2; PME-PME, 1.9; PME-PLE, 1.4; ALE-ALE, 1.2. Back row procurved.

**Chelicerae.** Few long thick and many short bristles prodorsally, laterally a broad band of short setae. Rastellum absent. Furrow promargin with 1 small and 10 large close teeth, basomesally





FIG. 236. *Rhianodes atratus* (Thorell), holotype ♀ (CMG). A, carapace & chelicerae, dorsal view; B, sternum, maxillae & labium, ventral view. Scale line = 2mm.

with triangular cluster of 15-20 fine teeth in basal third.

**Labium.** 0.60 long, 1.08 wide. Bristles: 5 long curved setae behind front band, 1 thick centrally, and 5 long curved behind that. Labiosternal suture a broad deep groove.

**Maxillae.** 2.05 long in front, 2.89 long behind, 1.45 wide; 12-14 cuspules in inner angle, not on mound. Heel distinctly produced; anterior lobe indistinct.

**Sternum.** 3.64 long, 3.40 wide. Sigilla posterior pair clearly largest, but all small, oval, marginal.

**Legs.** 8 weak basifemoral thorns on I, 4 weak on II, 6 on IV. Thorn spines and preening combs absent. All tarsi incrassate.

	I	II	III	IV	Palp
Femur	4.67	4.00	3.58	5.33	-
Patella	3.09	2.73	2.42	2.91	-
Tibia	3.09	2.55	2.55	4.24	-
Metatarsus	2.36	2.24	2.73	4.73	-
Tarsus	2.00	2.12	2.24	2.24	-
Total	15.21	13.64	13.52	19.45	-

**Scopula.** Metatarsi: I, II, full, dense; III, sparse group in distal 1/4, mixed with setae; IV, absent. Tarsi: I, II, full, dense, entire; III, divided by narrow setal band 2-4 wide; IV, divided by slightly wider setal band 6-8 wide.

**Spines.** I: fe p1, pa 0, ti v1w, me 0. II: fe p1, pa 0, ti p1, v3w, me 0. III: fe p2, d1, r2, pa p2, r1, ti p2, r2, v6, me p2, r2, v7. IV: fe r1, pa r1, ti p1, r2, v9, me p2, r3, v8. Palp: unknown.

**Claws.** 2 small teeth medially on leg I; leg IV bare; palp unknown.

**Trichobothria.** Two rows, each of c.10 for 3/4 of tibiae; c.20 on metatarsi in short curved row

forming band distally; c.6 small clavate and c.20 filiform on tarsi.

**Spermathecae.** Four, on each side a narrow thumb-like inner lobe and adjacent long, slender lobe with apical expansion.

**Spinnerets.** PMS 0.51 long, 0.22 wide, 0.14 apart, and c.0.25 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.45, 0.60, 0.24, 2.29 long, respectively.

#### DISTRIBUTION

Varirata National Park, Central Province, PNG.

#### *Rhianodes* Raven, 1985

*Rhianus* Thorell, 1890, p. 276; Roewer, 1942, p. 224; Bonnet, 1958, p. 3859; Brignoli, 1983, p. 129; Raven, 1985b, p. 112, 158.

*Rianus* (*lapsus calami*); Simon, 1892, p. 127.

*Rhuanodes* Raven, 1985b, p. 112, 158; Platnick, 1989, p. 94. Replacement name for *Rhianus* Thorell, preoccupied in the Colcoptera by *Rhianus* Pascoc, 1889.

#### TYPE SPECIES

*Rhianus atratus* Thorell, 1890 by monotypy.

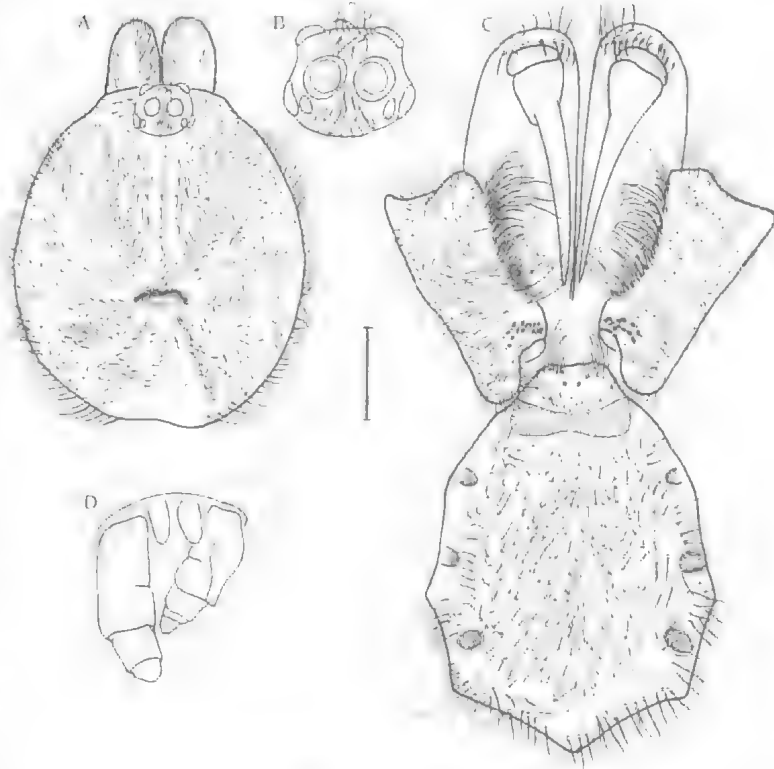
#### DIAGNOSIS

Differs from *Nihou* in lacking claw tufts on the palp of ♀♀ and from *Sipalolasma* in the longer eye group.

#### DESCRIPTION

Carapace rounded, hirsute. Fovea broad, procurved in ♀♀, recurved in ♂♂. Clypeus absent. Eyes on tubercle in 3 rows. Maxillary lyra absent; anterior face of maxillae with long pallid groove parallel to horizontal. Maxillae with 10-20 cuspules grouped on inner corner, heel produced, anterior lobes broad, rounded. Rastellum absent. Labium wider than long, with few cuspules in ♂♂ and ♀♀. Sternum clearly longer than wide, 3 pairs of round marginal sigilla. Four spinnerets; PMS up to 0.4 times width of posterior laterals. FEMALES. Few spines on legs I, II. Scopula usually entire on metatarsi I, II, divided on tarsi I and II; thin and divided by setae, if present, on metatarsi III, IV. Basifemoral thorns present or absent. Thorn spines on distal patellae III, sometimes present. Females with one row of teeth on paired claws medially. Claws on legs I, IV of similar size. Palpal claw edentate; palpal claw tufts absent. Preening combs absent. Dorsal abdomen mottled; legs typically without annulations. Spermathecae two, each a broad,

FIG. 237. *Rhianodes atratus* (Thorell), ♂ (QMS19059). A, carapace & chelicerae, dorsal view; B, eyes, dorsal view; C, sternum, maxillae, labium & chelicerae, ventral view; D, spinnerets, ventral view. Scale line = 2mm (A); 1mm (B-D).



raised lobe. MALES. Claws with 1 (IV) or 2 (I) rows of teeth. Tibia I dis- toventrally with conical spur bearing strong megaspine, microspur short, set against short megaspine; long curved spine arises from base of spur. Scopulate surfaces of tarsi pallid. Bulb moderately large with broadly based embolus and slightly reflexed origin; embolus distally broad, blade-like; cymbium distinctly dimorphic, retrolateral longer and much larger than prolateral lobe, and not truncate but roundly pointed; tibia in- crassate; retrolateral face of cymbium concave. Intercheliceral tumescence absent; basomesal granules present on cheliceral furrow.

#### INCLUDED SPECIES

*Rhianus atratus* Thorell, 1890

#### DISTRIBUTION

Penang I, Malaysia, and Singapore.

#### REMARKS

Simon (1892) had seen few barychelid genera and had evidently not seen *Rhianodes atratus* (Thorell). Consequently, he allied the genus to *Sason* rather than *Encyocrypta* or *Plagiobothrus* which are far more similar to *Rhianodes* than *Sason*. He always listed the genus by the spelling 'Rianus'. Hence, the difference is considered a *lapsus calami* rather than an emendation.

***Rhianodes atratus* (Thorell, 1890)**  
(Figs 236-239, Table 2)

*Rhianus atratus* Thorell, 1890, p. 277; Roewer, 1942, p. 224.

#### MATERIAL EXAMINED

TYPE. Holotype ♀, Penang I, Malaysia, 5°20'N, 100°25'E, in CMG.

OTHER MATERIAL EXAMINED. ♂, Kent Ridge, Singapore [1°19'N 103°49'E], 3 Nov 1986, J. Koh, QMS19059 [86.11.03.01]; ♀, same data but, 12 Aug 1989, J. Koh, QMS19553; 3 ♀♀, Maxwell's Hill, Singapore, 1150m, 5 Feb 1991, J. Wunderlich, QMS20510, 20524, 20525; ♀, Phang Rd, 0.65 miles N of Kuala Lumpur, Malaysia, Mar-May 1950, R. Traub, U.S. Scrub Typhus Unit, AMNH.

#### DIAGNOSIS

As for genus.

#### DESCRIPTION

##### MALE QMS19059

Carapace 7.19 long, 6.31 wide. Abdomen 5.31 long, 3.56 wide. Total length, 14.

**Colour.** Carapace shiny orange brown, chelicerae, and legs orange brown, not annulated. Abdomen dorsally brown with fine white ver- miform reticulations; ventrally pallid with brown areas in front of spinnerets and medially.

**Carapace.** Pilosity: few long silver hairs, uniform cover of short strong black bristles; striae indistinct, narrow. Bristles: c.8 erect slightly



FIG. 238. *Rhianodes atratus* (Thorell), ♂ (QMS19059). A, tibia & metatarsus I, prolateral view; B, D, palpal bulb, retrolateral (B), ventral (D); C, cymbium, ventral view. Scale line = 1mm (B); 0.5mm (A, C, D).

thickened black beside posterior striae; 9 anteromedially; 5 long thick and 8-10 finer between PME, and 5 long thick and 6-8 finer between ALE on clypeal edge; light pile of long hairs on lateral margins in posterior half, long curved bristles for length. Fovea short, straight with recurved edges. Caput low.

**Eyes.** Tubercle distinctly elevated, posteriorly vertical. Group occupies 0.38 of head-width; front width, back width, length, 73:88:63, respectively. Back row procurved. MOQ front width, back width, length, 63:66:44. AME:ALE: PME:PLE, 26:23:17:25. Eye interspaces: AME-AME, 0.3; AME-ALE, 0.6; ALE-ALE, 1.3; PME-PLE, 0; PME-PME, 1.8; ALE-PLE, 0.7.

**Chelicerae.** Many long curved brown bristles prodorsally, laterally two lines of straight brown bristles. Rastellum absent but line of 10-15 short strong bristles overhanging fang. Intercheliceral tumescence absent. Furrow promargin with 8 large spaced teeth and two small teeth anteriorly, basomesally with 10-15 fine granules.

**Labium.** 0.56 long, 1.16 wide. Two blunt cuspules medially. Labiosternal suture a continuous groove narrowed medially.

**Maxillae.** 1.88 long in front, 2.50 long behind, 0.84 wide; with 13-14 cuspules in inner angle. Heel distinctly produced; anterior lobe small, in-

distinct. Prolateral face with horizontal, pallid, glabrous groove near 'lyra zone'.

**Sternum.** 4.00 long, 3.06 wide. Sigilla all oval, marginal; posterior pair slightly larger.

	I	II	III	IV	Palp
Femur	6.38	6.13	5.31	7.94	3.00
Patella	3.50	3.38	2.88	3.13	2.13
Tibia	4.75	4.56	3.81	6.06	2.38
Metatarsus	4.38	4.38	4.38	8.75	-
Tarsus	2.13	2.06	1.69	2.13	1.50
Total	21.14	20.51	18.07	28.01	9.01

**Legs.** Tibia I distoventrally with conical spur bearing short strong megaspine, microspur short, ellipsoidal, set against short conical upcurved megaspine. Long curved spine arises from base of spur. Preening combs and thorn spines absent. Femora III incrassate. Legs setose but with few hairs. Scopulate surfaces of tarsi pallid.

**Scopula.** Metatarsi: I, II, distal 3/4 (I)-1/3 (II), hairs short, entire; III, sparse group in distal 1/6, mixed with setae; IV, absent. Tarsi: I, II, full, dense, divided by band of setae widening distally; III, divided by narrow setal band 8-10 wide; IV, divided by wide setal band 10-12 wide.

**Spines.** I: fe p1, pa 0, ti p1 + megaspine, v1 + megaspine, me v1 basal. II: fe p1, pa 0, ti p2, v2, me v1. III: fe p1, r1, pa p2, ti p2, r1, v3, me p4, r2, v7. IV: fe 0, pa 0, ti p1, r1, v2, me p4, r1, v9. Palp: fe p1, elsewhere 0.

**Claws.** As high as tufts; 3 teeth in each of two rows on leg I; on leg IV with 1-2 teeth medially.

**Trichobothria.** Two rows, each of c.9 for two-thirds of tibiae; c.16 on metatarsi in slightly curving row; c.12 filiform on tarsi, none clavate.

**Pulp.** Bulb moderately large with broadly based embolus and slightly reflexed origin; embolus distally broad, blade-like; cymbium distinctly dimorphic, retrolateral longer and much larger than prolateral lobe, and not truncate but roundly pointed; tibia incrassate; retrolateral face of cymbium concave.

**Spinnerets.** PMS well developed; 0.47 long, 0.22 wide, 0.13 apart, c.0.35 of basal PLS in diameter. Basal, middle, apical, and total articles of PLS 1.25, 0.28, 0.09, 1.62 long, respectively.

#### FEMALE QMS19553

Carapace 8.00 long, 7.33 wide. Abdomen 11.20 long, 7.73 wide. Total length, 23.

**Colour.** Carapace dark orange brown, chelicerae and legs darker, legs not annulated. Abdomen dorsally brown with many small white spots forming no distinct pattern; ventrally brown with large white mottling centrally.

**Carapace.** Pilosity: uniform light cover of fine brown hair and black bristles; striae distinct,

broad; interstrial ridges setose. Bristles: c.4 slightly incrassate erect black beside posterior striae; c.12 anteromedially and c.20 in band beside caput; 6 long thick and several finer between PME, and 3 long thick and several shorter between ALÉ; short hairs and long brown bristles on lateral margins. Fovea short, procurved.

**Eyes.** Tubercle distinct. Group occupies 0.28 of head-width; front width, back width, length, 80, 87, 72, respectively. Back row procurved. MOQ front width, back width, length, 58, 61, 43, respectively. AME:ALE:PME:PLE, 23:25: 13:30. Eye interspaces: AME-AME, 0.4; AME-ALE, 0.7; ALE-PLE, 1.1; PME-PME, 1.7; PME-PLE, 0; ALE-ALE, 1.7.

**Chelicerae.** Narrow band of few long black and many short bristles prodorsally, laterally two narrow setose bands. Rastellum absent, save for dense cluster of short strong curved bristles forming line overhanging fang; mound absent. Furrow promargin with 12 teeth, distal 3 smaller, basomesally with line of c.10 small teeth and c.20 granules in basal 1/3.

**Labium.** 0.87 long, 1.60 wide; with 2 cuspules anteriorly; all setae of uniform size. Labiosternal suture a narrow groove.

**Maxillae.** 2.33 long in front, 3.27 long behind, 1.33 wide; with c.12 cuspules in inner angle, not on mound. Anterior face with narrow glabrous pallid groove for length of maxillae, just above long glandular hairs. Heel distinctly produced but rounded; anterior lobe indistinct, broadly domed.

**Sternum.** 4.40 long, 3.87 wide. Sigilla all small, suboval, marginal.

**Legs.** 5 small basifemoral thorns on I; 3 thorn spines on patellae III; preening combs absent.

	I	II	III	IV	Palp
Femur	5.07	4.87	4.67	6.13	3.87
Patella	3.53	3.60	3.07	3.53	2.73
Tibia	3.33	2.93	2.80	4.40	2.67
Metatarsus	2.73	2.80	3.13	5.80	-
Tarsus	1.53	1.67	1.40	1.73	2.33
Total	16.19	15.87	15.07	21.59	11.60

**Scopula.** Wide, dense, extending for lower 180° of leg tarsi, 270° of palpal tarsi; not diagonal. Metatarsi: I, II, full, dense, entire; III, in distal 1/4, mixed with setae; IV, absent. Tarsi: I, II, full, dense, entire; III, IV, in distal 5/6, widely divided

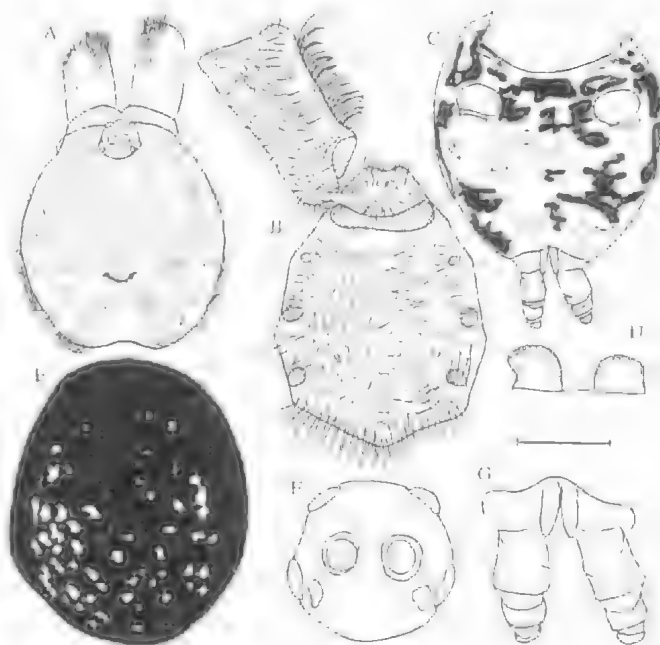


FIG. 239. *Rhianodes atratus* (Thorell), ♀ (QMS19553). A, carapace & chelicerae, dorsal view; B, sternum, maxilla & labium, ventral view; C, E, abdomen, ventral (E), dorsal view (C); D, spermathecae; F, eyes, dorsal view; G, spinnerets, ventral view. Scale line = 1mm (B, F); 2mm (G); 4mm (A, C, E); 0.5mm (D).

by long, dark, lanceolate setae in band twice width of a scopula band.

**Spines.** I: fe p1, pa 0, ti v1, me v1 distal. II: fe p1, pa 0, ti p2, v1, me v1 distal. III: fe d1w, r1w, pa p3 (thorns), ti p2, r1, v3, me p4, r2, v7. IV: fe r1w, pa 0, ti r1, v3, me p4, r1, v8. Palp: fe p1, pa 0, ti p4, v6

**Claws.** All of similar size, rising above tufts; tuft diameter slightly less than that of tarsi; 1-2 short teeth medially on leg claws; palpal claw surrounded by scopula, with two teeth.

**Trichobothria.** Two rows, each of c.10 for basal 1/2 of tibiae; c.15 in band confined to distal 1/2 on metatarsi I-III, c.30 for full length in curving row on IV; 3-5 small clavate and c.12 filiform on tarsi.

**Spermathecae.** Two, each a broad raised lobe.

**Spinnerets.** PMS 0.65 long, 0.35 wide, 0.10 apart, and c.0.44 of basal PLS in diameter. Basal, middle, apical, total articles of PLS, 1.61, 0.68, 0.48, 2.77 long, respectively.

## DISTRIBUTION &amp; HABITAT

Penang I, Malaysia, and in rainforest at Kent Ridge, Singapore. The latter area is now a military enclosure with forest intact.

## REMARKS

The holotype was loaned under special conditions and was not dissected.

## SUBFAMILY SASONINAE

*Sason* Simon, 1887

*Sarpedon* O. P.-Cambridge, 1883, p. 353. Type species by monotypy *Sarpedon robustum* O. P.-Cambridge, 1883.

*Sason* Simon, 1887, p. 195; Roewer, 1942, p. 224; Brignoli, 1983, p. 129; Raven, 1985b, p. 114; Raven, 1986, p. 49; Platnick, 1989, p. 94. Replacement name for *Sarpedon* preoccupied in the Coleoptera by *Sarpedon* Bonvouloir, 1870.

*Satzicus* Simon, 1888, p. 286. Type species by monotypy *Satzicus andamanicum* Simon, 1888. First synonymized by Simon, 1892.

*Oecophloeus* Pocock, 1892, p. 49. Type species by monotypy *Oecophloeus cinctipes* Pocock, 1892. First synonymized by Simon, 1892.

*Chrysopelma* Roewer, 1963, p. 113; Brignoli, 1983, p. 130; Raven, 1985b, p. 113; Platnick, 1989, p. 93. Type species by original designation *Chrysopelma maculata* Roewer, 1963. First synonymized by Raven, 1985b.

## DIAGNOSIS

Differs from *Paracenobiopelma* in lacking a clypeus, and from *Cosmopelma* by having a line of cuspules on the anterior edge of the labium in ♀♀. *Sason* is the only barychelid in Australia with a widely rectangular eye group; the striking cephalic and abdominal pattern are effective in field recognition.

## DESCRIPTION

Small, strongly patterned. Carapace glabrous but with many short bristles, especially in ♂♂. Caput low but arched medially. Thoracic region slopes down from broad, shallow, slightly procurved or recurved fovea. Eyes in three rows or two rows with strongly procurved front row. Back row more or less straight. Eye group about twice as wide as long, rectangular. Eye tubercle absent or low, and if present, usually excludes ALE. Clypeus absent. Chelicerae short, sloping, with one row of teeth on furrow. Rastellum absent or with two to four short spines. Maxillae rectan-

gular; anterior lobe not differentiated; heel acute, rounded; few cuspules in line in ♀♀, present or absent in ♂♂. No lyrae present. Labium rectangular, anterior edge straight, lateral edges almost parallel; ♂♂ of some species and all ♀♀ armed with stout cuspules in line. Sternum cordate with two or three pairs of small, oval to round sigilla touching margin, and on sloping edge. Labiosternal suture narrow, distinct. Legs stout, sometimes with distinct annulations. Leg formula 4123. Scopulae entire but thin for full length of metatarsi and tarsi I, II; divided, distal if present on metatarsi III, IV; divided, thin if present on tarsi III, IV. Spines generally weak, few in number; often present on femora, ventral patellae, rarely on metatarsi, never on tarsi. Preening combs absent. Tarsi of ♀♀ short, stout. Palpal claw bare, large with tuft weak to absent. Paired claws without teeth or with one row of teeth in ♂♂ and ♀♀. Leg claw tufts small, moderately dense but never conceal claws entirely. Trichobothria in two short rows extending to half to two-thirds of tibiae; distal group on metatarsi; broad band on tarsi. Tarsi with both filiform and broadly clavate trichobothria; clavates confined to proximal half of tarsi; bothria corrugiform. Tarsal organ low, domed, distal. Cuticle smooth. Four spinnerets; PMS well developed, long. PLS short; apical segment domed, with distal cluster of spigots. Spermathecae with two receptacula, sometimes apically divided. MALES. Tibia I with prolateral distal spur bearing megaspine. Palpal tibia short; cymbium short, truncate, undivided; bulb pyriform with tapering embolus.

## DISTRIBUTION

*Sason* is known from the Seychelles, the Andaman and Mariana Islands, southern India, Ceylon, northern Australia, and New Guinea (Raven, 1986). Juvenile *Sason* have also been taken from montane rainforest in Viti Levu, Fiji (QMS16636).

## BURROW

The retreat consists of a very short tube with a door at each end (Pocock 1900, Coleman 1981, Raven, 1986). The outer surface of the retreat is usually impregnated with particles of soil and leaves.

## INCLUDED SPECIES

*Sason andamanicum* (Simon, 1888)  
*Sason colemani* Raven, 1986.  
*Sason maculatum* (Roewer, 1963)  
*Sason pectinatum* Kulczynski, 1908.  
*Sason robustum* (O. P.-Cambridge, 1883)

*Sason seychellianum* Simon, 1898.

*Sason colemani* Raven, 1986  
(Figs 3E, 16A, 17C, D, 19C, 22D)

*Sason colemani* Raven, 1986, p.56; Platnick, 1989, p. 94.

#### MATERIAL EXAMINED

Types. Holotype ♂, paratype ♀, Cairns, NEQ, in swamp on trees in short tubes covered by bark particles, 17.xi.1980, N.C. Coleman, QMS1311, 1312; ♀ paratype, same data QMS1313.

OTHER MATERIAL EXAMINED Cape Tribulation, 16°05'S 145°26'E, rainforest 1m above sea level, NEQ: ♂, baited flight trap, 17-24 Oct 1981, GBM, DY, GT, QMS(X?)7703; ♂, stick brushing, 25 Sep 1982, GBM, DY, GT, QMS9680; 10 ♀♀, plus juv., 24-29 Aug 1988, RR, JG, TC, QMS11203-11212, S11214, S11156, S11193, S11358.

#### DIAGNOSIS

Differs from *S. andamanicum* by having teeth on the claws of the ♂, two coniform rastellar spines, and more spinose legs.

Fovea almost straight. Rastellum consists of 2-3 coniform spines. Spines present on femora I-IV and tibiae I and II of ♂♂, and ventral patellae and metatarsi I, II of ♀♀. FEMALES. Scopula divided on metatarsi and tarsi I, II; absent on metatarsi and tarsi III, IV. MALES. Tibia I with prolateral and distal megaspine on low ectally directed spur. Palpal bulb pyriform.

#### DISTRIBUTION & HABITAT

A natural swamp in the Botanical Gardens, Cairns, and lowland rainforest at Cape Tribulation, both in NEQ. Spent nests were noted on the lower slopes of the Kuranda Range just west of Cairns.

#### NATURAL HISTORY

The retreat consists of a very short shallow tube with a door at each end.

The doors are thin with serrated edges and often lichen is growing on them. The nests are most common in the shallow indentations made by insects in the trunks of palms. In winter, 16 nests were noted in a area of about 100cm<sup>2</sup>. Raven (1986) noted that when one door of the nests is open the other is pressed closed; that is the case in some not all nests.

Males of *S. colemani* have been taken in August and September and noted nocturnally active on trunks in April and July. None have been taken in pitfall traps; only one was taken on the ground (stick-brushing). Hence, it is likely that ♂♂ rarely come to the ground. No ♀♀ with eggs or young have yet been taken. Because the nest is only about 3-4 times the total length of an adult, only few young, if any, could be accommodated for any time in the maternal nest. Specimens noted at Cape Tribulation did not seem to suffer the severe predation from day hunting wasps that seem to devastate another bark-dwelling mygalomorph, e.g. Migidae, from Cairns south to Brisbane (pers. obs.). Migid nests in rainforests are often found empty or with a wasp pupal case.

#### SPECIES INCERTAE SEDIS

*Nihoa* (?) *sordida* (Rainbow, 1898)  
(Fig. 240)

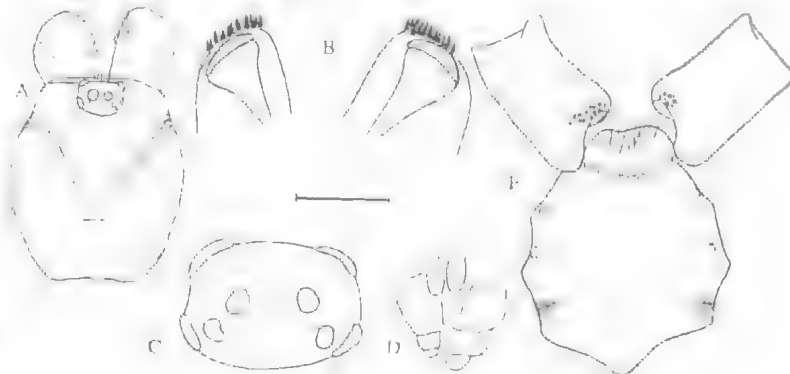
*Idiommatia sordida* Rainbow, 1898, p. 330; Roewer, 1942, p. 215; Bonnet, 1957, p. 2288; Davies & Gallon, 1986, p. 225; Platnick, 1989, p. 93.

*Sipalolasma sordida* (Rainbow, 1898): Raven, 1985b, p. 161; Platnick, 1989, p. 95.

#### MATERIAL EXAMINED

TYPE. Holotype juv ♀, Neneba, PNG, A. Giulianetti, QMW3503.

FIG. 240. *Nihoa sordida* (Rainbow), holotype, juvenile ♀ (QMW3503). A, carapace & chelicerae, dorsal view; B, apical chelicerae showing rastellar spines, ventral view; C, eyes, dorsal view; D, spinnerets, ventral view; E, sternum, maxillae, labium & chelicerae, ventral view. Scale line = 1mm (C, E); 2mm (A); 0.5mm (B, D).





## DESCRIPTIVE NOTES

The specimen is blackened through preservation artefacts and little detail of value is present:

Fovea short, straight. Eye group clearly twice as wide as long. Clypeus absent. Chelicerae with several spines along overhanging edge. Maxillae with c.12-15 cuspules; labium wide, without cuspules. Sternum cordate; all sigilla small, marginal. PMS present, well developed. Palpal claw tuft present, palpal claw slightly smaller than tuft. Scopula on legs I, II, full dense, entire; divided by setae on tarsi IV: none on metatarsi III, IV. Paired claws as high as tufts and all of similar size; one tooth on claws of IV. No clavate trichobothria or spermathecae.

## REMARKS

The palpal claw tuft excludes this species from *Sipalolayna* where I last placed it. The size of the palpal claw and PMS, and the number of cuspules on the maxillae place the species tentatively in *Nihoa* where its eye group is the widest known. Without adults, further discussion is unwarranted.

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